

GenCore version 4.5
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OM protein - protein search, using sw model
Run on: September 25, 2002, 10:01:12 ; Search time 29.75 Seconds
(without alignments)
504.032 Million cell updates/sec

Title: US-09-819-094-18
Perfect score: 135
Sequence: 1 MVQTVPLSRFLDHMLQAHK.....KDLEGIQTLMGRLEDGSPR 135

Scoring table: OLIGO

Gapop 60.0 , Gapext 60.0

Searched: 747574 seqs, 11107396 residues

Word size : 0

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 1000 summaries

Database : A_Geneseq_032802.*

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- 22: /SIDSI/gcgdata/hold-geneseq/geneseq-emb1/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	ID	Description
1	135	100.0	135 20 AAW92263	Human anti-angioge
2	79	58.5	191 20 AAY31765	Human placental la
3	79	58.5	191 21 AAY78426	Human placental la
4	79	58.5	192 20 AAW92262	Human anti-angioge
5	73	54.1	135 22 AAO04730	Human polypeptide
6	70	51.9	129 22 AAO04735	Human polypeptide
7	52	38.5	115 22 AAO12412	Human polypeptide
8	52	38.5	145 22 AAM25914	Human protein sequ
9	52	38.5	229 22 AAU21684	Novel human neopla
10	50	37.0	75 22 AAO05545	Human polypeptide
11	46	34.1	120 22 AAO11018	Human polypeptide

85	22	16.3	191	13	AAR24746	hGH variant #34 -	158	22	16.3	226	15	AAR49814	20K hGH (42Ser).
86	22	16.3	191	13	AAR24747	hGH variant #35 -	159	22	16.3	241	20	AAW88526	Fusion of killer t
87	22	16.3	191	13	AAR24748	hGH variant #36 -	160	22	16.3	244	20	AAR10042	Plasmid pOW885 hum
88	22	16.3	191	13	AAR24749	hGH variant #37 -	161	22	16.3	245	21	AAV69791	MPsp-MWmp20-(His
89	22	16.3	191	13	AAR24750	hGH variant #38 -	162	22	16.3	261	10	AAV91299	Human nerve growth
90	22	16.3	191	13	AAR24751	hGH variant #39 -	163	22	16.3	262	7	AAV61033	Human beta-nerve g
91	22	16.3	191	13	AAR24752	hGH variant #40 -	164	22	16.3	262	12	AAV11740	Human growth hormo
92	22	16.3	191	13	AAR24753	hGH variant #41 -	165	22	16.3	274	21	AAV26776	Human growth hormo
93	22	16.3	191	13	AAR24754	hGH variant #42 -	166	22	16.3	344	22	AAV70473	Npro-hGH fusion pr
94	22	16.3	191	13	AAR24755	hGH variant #43 -	167	22	16.3	360	21	AAV26777	Human growth hormo
95	22	16.3	191	13	AAR24756	hGH variant #44 -	168	22	16.3	397	12	AAV10043	Plasmid pOW360 enc
96	22	16.3	191	13	AAR24757	hGH variant #45 -	169	22	16.3	400	21	AAV79577	Rat retinol bindin
97	22	16.3	191	13	AAR24758	hGH variant #46 -	170	22	16.3	407	22	AAV45195	Human growth hormo
98	22	16.3	191	13	AAR24760	hGH variant #48 -	171	22	16.3	779	18	AAV22719	Human serum albumi
99	22	16.3	191	13	AAR24761	hGH variant #49 -	172	22	16.3	784	18	AAV22717	Human serum albumi
100	22	16.3	191	13	AAR24762	hGH variant #50 -	173	22	16.3	789	18	AAV22718	Human serum albumi
101	22	16.3	191	13	AAR24763	hGH variant #51 -	174	22	16.3	794	18	AAV22720	Human serum albumi
102	22	16.3	191	13	AAR24764	hGH variant #52 -	175	21	15.6	110	22	AAV11740	Human polypeptide
103	22	16.3	191	13	AAR24765	hGH variant #53 -	176	21	15.6	119	22	AAV03349	Human polypeptide
104	22	16.3	191	13	AAR24766	hGH variant #54 -	177	21	15.6	124	22	AAV11015	Human polypeptide
105	22	16.3	191	13	AAR24767	hGH variant #55 -	178	21	15.6	131	22	AAV10924	Human polypeptide
106	22	16.3	191	13	AAR24768	hGH variant #56 -	179	21	15.6	131	22	AAV10982	Human polypeptide
107	22	16.3	191	13	AAR24769	hGH variant #57 -	180	21	15.6	134	20	AAV92265	Human anti-angiot
108	22	16.3	191	13	AAR24770	hGH variant #58 -	181	21	15.6	191	20	AAV04397	Mutant human 22kDa
109	22	16.3	191	13	AAR24771	hGH variant #59 -	182	20	14.8	119	22	AAV02816	Human polypeptide
110	22	16.3	191	13	AAR24772	hGH variant #60 -	183	20	14.8	120	22	AAV11925	Human polypeptide
111	22	16.3	191	13	AAR24773	hGH variant #61 -	184	20	14.8	125	22	AAV11733	Human polypeptide
112	22	16.3	191	13	AAR24774	hGH variant #62 -	185	20	14.8	125	22	AAV11972	Human polypeptide
113	22	16.3	191	13	AAR24775	hGH variant #63 -	186	20	14.8	191	22	AAV49196	Growth hormone act
114	22	16.3	191	13	AAR24776	hGH variant #64 -	187	19	14.1	19	17	AAV15306	Placental lactogen
115	22	16.3	191	13	AAR28075	hGH variant #66 -	188	19	14.1	92	20	AAV42856	Human growth hormo
116	22	16.3	191	13	AAR24728	hGH variant #16 -	189	19	14.1	126	22	AAV04901	Human polypeptide
117	22	16.3	191	13	AAR28074	hGH variant #65 -	190	19	14.1	126	22	AAV11920	Human polypeptide
118	22	16.3	191	18	AAV38221	Human growth hormo	191	19	14.1	150	20	AAV42861	Chimeric protein,
119	22	16.3	191	18	AAV38222	Human growth hormo	192	19	14.1	191	20	AAV86013	Human growth hormo
120	22	16.3	191	18	AAV38220	Human growth hormo	193	19	14.1	191	22	AAV49202	Growth hormone act
121	22	16.3	191	18	AAV71289	Human growth hormo	194	19	14.1	214	20	AAV82801	Human growth hormo
122	22	16.3	191	20	AAV15809	Primary amino acid	195	19	14.1	310	11	AAV03255	Fusion protein of
123	22	16.3	191	20	AAV15810	Tagged human growt	196	18	13.3	118	22	AAV11923	Human polypeptide
124	22	16.3	191	20	AAV04396	Natural human 22kD	197	18	13.3	119	22	AAV11016	Human polypeptide
125	22	16.3	191	21	AAV78425	Human growth hormo	198	17	12.6	22	15	AAV54692	Human growth hormo
126	22	16.3	191	22	AAV19836	Human growth hormo	199	17	12.6	42	22	AAV08736	Human polypeptide
127	22	16.3	191	22	AAV49197	Growth hormone act	200	17	12.6	135	20	AAV92267	Human anti-angiot
128	22	16.3	191	22	AAV49198	Growth hormone act	201	17	12.6	192	20	AAV92266	Human anti-angiot
129	22	16.3	191	22	AAV49199	Growth hormone act	202	17	12.6	217	4	AAV30046	Sequence of human
130	22	16.3	192	10	AAV90129	Human growth hormo	203	17	12.6	246	22	AAV84938	Human FCTR4 polype
131	22	16.3	192	20	AAV92264	Human anti-angiot	204	16	11.9	94	22	AAV04553	Human polypeptide
132	22	16.3	192	22	AAV819835	Recombinant Ala-hu	205	16	11.9	97	22	AAV11785	Human polypeptide
133	22	16.3	193	8	AAV70260	Met-Asp-human grow	206	16	11.9	113	22	AAV11020	Human polypeptide
134	22	16.3	194	20	AAV30530	Recombinant human	207	16	11.9	119	22	AAV11924	Human polypeptide
135	22	16.3	198	16	AAV36819	hGHV-2(88) growth	208	16	11.9	161	22	AAV10812	Human polypeptide
136	22	16.3	202	1	AAV93637	Amino acid sequenc	209	15	11.1	101	22	AAV10349	Human polypeptide
137	22	16.3	203	15	AAV49815	20K hGH (42Met).	210	15	11.1	123	22	AAV11017	Human polypeptide
138	22	16.3	212	7	AAV60234	Sequence of AP sig	211	15	11.1	141	22	AAV08620	Human polypeptide
139	22	16.3	214	7	AAV60232	Sequence of Escher	212	14	10.4	14	17	AAV15302	Placental lactogen
140	22	16.3	214	7	AAV60233	Sequence of Escher	213	14	10.4	140	22	AAV10977	Human polypeptide
141	22	16.3	214	1	AAV05043	Human growth hormo	214	13	9.6	119	22	AAV11019	Human polypeptide
142	22	16.3	214	13	AAV22230	Human growth hormo	215	13	9.6	129	22	AAV10490	Human polypeptide
143	22	16.3	214	18	AAV10425	Synthetic human gr	216	13	9.6	138	22	AAV10986	Human polypeptide
144	22	16.3	214	20	AAV31766	Human growth hormo	217	13	9.6	506	17	AAV96296	Human p21-protein
145	22	16.3	214	21	AAV78424	Human growth hormo	218	13	9.6	506	18	AAV13379	Human p21 activate
146	22	16.3	214	21	AAV78460	Human growth hormo	219	13	9.6	506	19	AAV47119	Human p21-activate
147	22	16.3	217	8	AAV60719	Sequence of pre an	220	13	9.6	506	19	AAV40815	Human hPAK65 prote
148	22	16.3	217	8	AAV71058	Sequence of human	221	13	9.6	506	20	AAV55959	Human STE20-relate
149	22	16.3	217	9	AAV80974	Sequence of human	222	13	9.6	506	21	AAV82606	Human p21-protein
150	22	16.3	217	11	AAV05169	Human growth hormo	223	13	9.6	506	21	AAV78108	Human p21-protein
151	22	16.3	217	11	AAV60516	Human somatotropin	224	12	8.9	190	22	AAV49203	Growth hormone act
152	22	16.3	217	16	AAV76818	Human growth hormo	225	12	8.9	190	22	AAV49204	Growth hormone act
153	22	16.3	217	16	AAV68453	Human growth hormo	226	12	8.9	190	22	AAV49205	Growth hormone act
154	22	16.3	217	21	AAV26769	Secretory cell pro	227	12	8.9	190	22	AAV49206	Growth hormone act
155	22	16.3	217	21	AAV10340	Human growth hormo	228	12	8.9	191	22	AAV49200	Growth hormone act
156	22	16.3	217	22	AAV84937	Human FCTR3 polype	229	12	8.9	191	22	AAV49201	Growth hormone act
157	22	16.3	217	22	AAV35428	Secretory cell lin	230	11	8.1	11	17	AAV15301	Placental lactogen

377	9	6.7	191	9	AAP00514	Recombinant porcine	450	7	5.2	46	22	AAB31640	Amino acid sequenc
378	9	6.7	191	9	AAP00771	Sequence of synthe	451	7	5.2	46	22	AAB31641	Amino acid sequenc
379	9	6.7	191	14	AAR33044	Mink Growth hormon	452	7	5.2	46	22	AAB31642	Amino acid sequenc
380	9	6.7	191	15	AAR49874	Porcine ST(1-191).	453	7	5.2	48	10	AAP91695	Bases 112-159 of e
381	9	6.7	191	17	AAR89477	Pig somatotropin.	454	7	5.2	63	18	AAW35264	Synthetic porcine
382	9	6.7	192	21	AAB03153	Chicken growth hor	455	7	5.2	110	21	AAB43051	Human ORFX ORP2815
383	9	6.7	193	5	AAP40435	Sequence of swine	456	7	5.2	117	22	AAG75677	Human colon cancer
384	9	6.7	193	11	AAR03249	Recombinant Porcin	457	7	5.2	123	22	AAO04556	Human polypeptide
385	9	6.7	193	11	AAR03251	Recombinant Ovine	458	7	5.2	143	21	AAB40458	Human ORFX ORP222
386	9	6.7	193	11	AAR03252	Recombinant Equine	459	7	5.2	150	18	AAW35281	Porcine somatotrop
387	9	6.7	193	11	AAR03250	Recombinant Bovine	460	7	5.2	154	13	AAW35281	Human growth hormo
388	9	6.7	193	11	AAR03254	Recombinant Avian	461	7	5.2	156	21	AAW35281	Arabidopsis thalia
389	9	6.7	193	12	AAR15739	Recombinant Cys 10	462	7	5.2	189	13	AAW35281	Porcine somatotrop
390	9	6.7	193	13	AAR25647	Recombinant porcine	463	7	5.2	192	21	AAG28658	Arabidopsis thalia
391	9	6.7	193	13	AAR25648	Recombinant porcine	464	7	5.2	192	21	AAG33689	Arabidopsis thalia
392	9	6.7	193	13	AAR25649	Recombinant porcine	465	7	5.2	193	13	AAW35654	Recombinant porcine
393	9	6.7	193	13	AAR25650	Recombinant porcine	466	7	5.2	193	13	AAW35656	Recombinant porcine
394	9	6.7	193	13	AAR25651	Recombinant porcine	467	7	5.2	193	13	AAW35657	Recombinant porcine
395	9	6.7	193	13	AAR25652	Recombinant porcine	468	7	5.2	193	13	AAW35658	Recombinant porcine
396	9	6.7	193	13	AAR25653	Recombinant porcine	469	7	5.2	193	13	AAW35659	Recombinant porcine
397	9	6.7	193	13	AAR25661	Recombinant porcine	470	7	5.2	193	13	AAW35660	Recombinant porcine
398	9	6.7	193	13	AAR25663	Recombinant porcine	471	7	5.2	193	13	AAW35662	Recombinant porcine
399	9	6.7	193	16	AAR711391	CI83,191E-pst. Su	472	7	5.2	193	13	AAW35664	Recombinant porcine
400	9	6.7	193	20	AAV30527	Recombinant porcine	473	7	5.2	193	13	AAW35665	Recombinant porcine
401	9	6.7	193	20	AAV30529	Recombinant porcine	474	7	5.2	193	13	AAW35666	Recombinant porcine
402	9	6.7	194	11	AAR03253	Recombinant Human	475	7	5.2	209	8	AAW70341	Bel growth hormone
403	9	6.7	199	20	AAW93607	Pig growth hormone	476	7	5.2	209	9	AAW81165	GH-1 protein. AA
404	9	6.7	210	5	AAP40685	Sequence of porcine	477	7	5.2	216	20	AAW95603	Equus caballus som
405	9	6.7	212	9	AAP80852	Sequence encoded b	478	7	5.2	235	22	AAU29401	Human G protein-co
406	9	6.7	216	5	AAP40215	Sequence of turkey	479	7	5.2	328	22	AAE01337	Human gene 24 enco
407	9	6.7	216	5	AAP40214	Sequence encoded b	480	7	5.2	346	22	AAE01338	Human gene 24 enco
408	9	6.7	216	13	AAR22592	Mink pre-growth ho	481	7	5.2	352	21	AAW09955	Arabidopsis thalia
409	9	6.7	216	15	AAW57492	Val184, Ser186-can	482	7	5.2	352	22	ABW52897	Escherichia coli p
410	9	6.7	216	15	AAW57493	Gly184, Ala186-can	483	7	5.2	358	21	AAW09954	Arabidopsis thalia
411	9	6.7	216	15	AAW57780	Silver fox growth	484	7	5.2	360	21	AAW09953	Arabidopsis thalia
412	9	6.7	216	20	AAW56605	Sus scrofa somatot	485	7	5.2	465	22	AAG82291	S. epididymidis ope
413	9	6.7	217	21	AAW79566	Insulin secretory	486	7	5.2	466	21	AAW36664	Arabidopsis thalia
414	9	6.7	217	22	AAW36000	Ostrich growth hor	487	7	5.2	466	21	AAW36612	Arabidopsis thalia
415	9	6.7	218	15	AAW36360	Mature mink growth	488	7	5.2	467	22	AAU67666	Propionibacterium
416	9	6.7	342	22	AAW70427	Npro-PGH fusion pr	489	7	5.2	478	21	AAW36663	Arabidopsis thalia
417	8	5.9	22	21	AAW34313	Human secreted pro	490	7	5.2	478	21	AAW39611	Arabidopsis thalia
418	8	5.9	43	6	AAP51216	Human growth hormo	491	7	5.2	485	21	AAW99658	Human GTPase assoc
419	8	5.9	43	22	AAW90851	Growth hormone pep	492	7	5.2	536	22	AAU01205	Human caspase recr
420	8	5.9	48	10	AAP91497	Bases 112-159 of b	493	7	5.2	565	22	ABW57959	Drosophila melanog
421	8	5.9	48	10	AAP91500	Bases 112-159 of o	494	7	5.2	614	21	AAW36662	Arabidopsis thalia
422	8	5.9	49	20	AAW42855	Human growth hormo	495	7	5.2	618	21	AAW39610	Arabidopsis thalia
423	8	5.9	49	22	AAW82542	Human immune/haema	496	7	5.2	763	15	AAW49790	Sequence of specia
424	8	5.9	57	22	AAW04797	Human polypeptide	497	7	5.2	763	18	AAW26407	Matrix/scaffold-as
425	8	5.9	65	22	ABW23044	Protein #5043 enco	498	7	5.2	763	18	AAW08136	Human cytokine res
426	8	5.9	65	22	AAW31150	Peptide #5187 enco	499	7	5.2	763	20	AAW92415	Human SATB1 protei
427	8	5.9	70	12	AAW10223	N-terminal fragmen	500	7	5.2	763	21	AAW87955	Human CR4 protein.
428	8	5.9	70	13	AAW22031	Sequence of the fi	501	7	5.2	864	22	AAW94031	Human protein sequ
429	8	5.9	107	20	AAW42860	hGH-mini-proinsuli	502	7	5.2	942	22	AAW80046	Human protein SEQ
430	8	5.9	190	14	AAW43308	Sturgeon growth ho	503	7	5.2	993	22	AAE01339	Human gene 24 enco
431	8	5.9	190	14	AAW43309	Sturgeon growth ho	504	7	5.2	993	22	AAW93308	Human protein sequ
432	8	5.9	193	13	AAW25655	Recombinant porcine	505	7	5.2	1014	20	AAW35600	C. pneumoniae prot
433	8	5.9	256	9	AAP00598	Chicken/platelet d	506	7	5.2	1241	22	AAW79062	Human protein SEQ
434	8	5.9	256	14	AAW40968	CGH/PDGF Bv-sis fu	507	7	5.2	1294	22	ABW63502	Drosophila melanog
435	8	5.9	256	15	AAW63473	CGH/PDGF B fusion	508	6	4.4	7	22	AAW62804	Amino acid sequenc
436	7	5.2	8	15	AAW53598	Pig somatotropin t	509	6	4.4	8	22	AAW90852	Growth hormone pep
437	7	5.2	11	6	AAP50473	Determinant site o	510	6	4.4	9	12	AAW12183	Porcine somatotrop
438	7	5.2	11	15	AAW53597	Pig somatotropin t	511	6	4.4	9	15	AAW55776	Pig GH peptide 110
439	7	5.2	15	18	AAW35276	Epitope comprising	512	6	4.4	9	18	AAW35271	Epitope comprising
440	7	5.2	17	15	AAW49704	Pig GH peptide 122	513	6	4.4	10	14	AAW33943	Wild type hGH. Ho
441	7	5.2	17	18	AAW35275	Epitope comprising	514	6	4.4	10	19	AAW69540	Human 20K growth h
442	7	5.2	18	21	AAW78430	Human growth hormo	515	6	4.4	10	22	AAW86550	Saccharomyces cere
443	7	5.2	21	15	AAW49715	Sheep or pig GH pe	516	6	4.4	13	17	AAW98156	Blowfly PM48 antig
444	7	5.2	21	18	AAW35273	Epitope comprising	517	6	4.4	14	21	AAW35869	C-terminal fragmen
445	7	5.2	21	21	AAW88025	Human growth hormo	518	6	4.4	15	7	AAW61488	Peptide inducing h
446	7	5.2	23	9	AAP80476	Sequence of proxim	519	6	4.4	15	19	AAW69542	Human 20K growth h
447	7	5.2	31	18	AAW35274	Epitope comprising	520	6	4.4	16	19	AAW62380	Antithrombotic pep
448	7	5.2	32	10	AAP91493	Antigenic equivale	521	6	4.4	17	21	AAW25905	Ichthyophthirius m
449	7	5.2	45	10	AAP91297	Amino acids 1-16 o	522	6	4.4	19	9	AAW80553	Partial sequence o

523	6	4.4	19	10	RAP90942	Variant of residue	596	6	4.4	146	22	AAO11565	Human polypeptide
524	6	4.4	20	21	RAB25870	C-terminal fragmen	597	6	4.4	155	20	AAW97706	Staphylococcus aur
525	6	4.4	20	22	ABB36299	Peptide #3805 enco	598	6	4.4	155	21	AG38411	Arabidopsis thalia
526	6	4.4	20	22	ABB21660	Protein #3659 enco	599	6	4.4	155	22	AAW06762	Human foetal prote
527	6	4.4	20	22	AAW17295	Peptide #3729 enco	600	6	4.4	156	22	ABG25334	Novel human diagno
528	6	4.4	20	22	AAW29793	Peptide #3830 enco	601	6	4.4	157	22	AAW95771	Human protein sequ
529	6	4.4	25	20	AAW12466	Human 5' EST secre	602	6	4.4	159	21	AAW23777	Arabidopsis thalia
530	6	4.4	26	19	AAW64665	Synthetic gene cas	603	6	4.4	160	22	AAW63765	Human prostate can
531	6	4.4	27	22	ABB38316	Peptide #5822 enco	604	6	4.4	161	21	AAW33005	Pinus radiata tran
532	6	4.4	27	22	ABB23495	Protein #5494 enco	605	6	4.4	162	21	AAW33031	Arabidopsis thalia
533	6	4.4	27	22	AAW58932	Human brain expres	606	6	4.4	165	21	AAW52613	Helicobacter pylor
534	6	4.4	27	22	AAW17458	Human bone marrow	607	6	4.4	166	22	ABG01274	Novel human diagno
535	6	4.4	27	22	AAW19106	Peptide #5540 enco	608	6	4.4	166	22	AAU17494	Novel signal trans
536	6	4.4	27	22	AAW31755	Peptide #5792 enco	609	6	4.4	169	21	AAW38410	Arabidopsis thalia
537	6	4.4	36	4	AAW30655	Human growth hormo	610	6	4.4	170	22	ABG00899	Novel human diagno
538	6	4.4	36	22	AAW88976	Human immune/haema	611	6	4.4	170	22	AAW79413	Human protein SEQ
539	6	4.4	45	22	AAW49180	CORE peptide/ Hom	612	6	4.4	174	21	AAW23776	Arabidopsis thalia
540	6	4.4	50	22	AAW87442	Human immune/haema	613	6	4.4	178	20	AAW43527	Mouse interleukin-
541	6	4.4	51	22	AAW53288	Protonibacterium	614	6	4.4	178	20	AAW43528	Rat interleukin-1
542	6	4.4	51	22	AAW54523	Protonibacterium	615	6	4.4	178	20	AAW33280	Rat interleukin-1
543	6	4.4	54	22	ABB29143	Peptide #1794 enco	616	6	4.4	178	20	AAW33281	Mouse interleukin-
544	6	4.4	54	22	ABB34303	Peptide #1809 enco	617	6	4.4	178	22	AAW66665	Mouse interleukin-
545	6	4.4	54	22	AAW55098	Human brain expres	618	6	4.4	178	22	AAW66666	Rat interleukin-1
546	6	4.4	54	22	AAW67490	Human bone marrow	619	6	4.4	180	22	AAW81557	S. epidermidis ope
547	6	4.4	54	22	AAW15306	Peptide #1740 enco	620	6	4.4	181	22	AAW40801	Human polypeptide
548	6	4.4	54	22	AAW27780	Peptide #1817 enco	621	6	4.4	182	21	AAW53268	Human colon cancer
549	6	4.4	54	22	AAW03062	Peptide #1744 enco	622	6	4.4	183	21	AAW25257	Eucalyptus grandis
550	6	4.4	55	21	AAW63165	Human secreted pro	623	6	4.4	183	22	ABG01447	Novel human diagno
551	6	4.4	55	21	AAW40432	Human ORFX ORF196	624	6	4.4	183	22	ABG05819	Novel human diagno
552	6	4.4	56	13	AAW21913	Toxoplasma H11 ant	625	6	4.4	185	21	AAW14880	Arabidopsis thalia
553	6	4.4	56	22	ABB41963	Peptide #9469 enco	626	6	4.4	187	22	AAU16537	Human novel secret
554	6	4.4	56	22	AAW62840	Human brain expres	627	6	4.4	188	21	AAW42614	Human ORFX ORF2378
555	6	4.4	56	22	AAW75654	Human bone marrow	628	6	4.4	188	22	AAU16114	Human novel secret
556	6	4.4	56	22	AAW35764	Peptide #9801 enco	629	6	4.4	190	19	AAW42097	Human Rab protein
557	6	4.4	60	19	AAW62371	Antithrombotic pep	630	6	4.4	192	22	ABG05820	Novel human diagno
558	6	4.4	61	22	AAO11124	Human polypeptide	631	6	4.4	192	22	AAU25603	Human G protein-Co
559	6	4.4	63	22	AAW39898	Protonibacterium	632	6	4.4	194	22	AAU51451	Propionibacterium
560	6	4.4	63	22	AAW94785	Human reproductive	633	6	4.4	194	22	AAW00862	Human bone marrow
561	6	4.4	66	22	AAU44821	Protonibacterium	634	6	4.4	196	22	ABW60400	Drosophila melanog
562	6	4.4	66	22	AAW90086	C glutamicum prote	635	6	4.4	196	22	AAW93922	Human polypeptide,
563	6	4.4	67	22	AAU50022	Protonibacterium	636	6	4.4	196	22	AAW35402	Replication protei
564	6	4.4	76	22	AAW88458	Human immune/haema	637	6	4.4	197	15	AAW56498	TATA-binding prote
565	6	4.4	78	22	ABG02468	Novel human diagno	638	6	4.4	197	17	AAW06088	Drosophila TATA-bi
566	6	4.4	81	21	AAW03501	Human secreted pro	639	6	4.4	197	18	AAW25024	TATA-binding prote
567	6	4.4	82	20	AAW11800	Human 5' EST secre	640	6	4.4	199	14	AAW34398	Helicobacter pylor
568	6	4.4	86	21	AAW59682	Zea mays protein f	641	6	4.4	199	19	AAW38760	Rat prostaglandin
569	6	4.4	90	22	AAW65599	Protonibacterium	642	6	4.4	199	22	AAU35692	Helicobacter pylor
570	6	4.4	95	22	AAW75690	Human colon cancer	643	6	4.4	199	22	AAU35874	Helicobacter pylor
571	6	4.4	96	22	AAO10461	Human polypeptide	644	6	4.4	203	21	AAW42821	Human ORFX ORF2585
572	6	4.4	99	22	AAW62695	Protonibacterium	645	6	4.4	207	20	AAW35240	Chlamydia pneumoni
573	6	4.4	100	17	AAW90779	HCV antigen, D9020	646	6	4.4	210	22	AAW36659	Mouse CD7 protein
574	6	4.4	100	21	AAW36366	Arabidopsis thalia	647	6	4.4	212	22	ABW94107	Human protein sequ
575	6	4.4	102	22	AAW61976	Protonibacterium	648	6	4.4	213	22	ABG00983	Novel human diagno
576	6	4.4	103	22	AAO06424	Human polypeptide	649	6	4.4	214	22	ABW12391	Human bone marrow
577	6	4.4	106	22	AAW67279	Protonibacterium	650	6	4.4	215	22	AAW98598	Mouse olfactory re
578	6	4.4	107	20	AAW29509	Human lung tumour	651	6	4.4	216	22	AAW98588	Mouse olfactory re
579	6	4.4	107	20	AAW44450	Human lung tumour-	652	6	4.4	224	21	AAW40035	Arabidopsis thalia
580	6	4.4	107	22	AAW13791	Human lung tumour-	653	6	4.4	224	21	AAW44268	Arabidopsis thalia
581	6	4.4	107	22	AAW91557	Human immune/haema	654	6	4.4	235	20	AAW34824	Chlamydia pneumoni
582	6	4.4	107	22	AAO00130	Human polypeptide	655	6	4.4	235	20	AAW35400	Amino acid sequenc
583	6	4.4	111	22	ABG00969	Novel human diagno	656	6	4.4	237	18	AAW20709	H. pylori transmem
584	6	4.4	117	21	AAW03847	Human secreted pro	657	6	4.4	238	20	AAW36088	Extended human sec
585	6	4.4	120	22	AAW44177	Protonibacterium	658	6	4.4	242	21	AAW04903	Arabidopsis thalia
586	6	4.4	127	22	ABW66557	Drosophila melanog	659	6	4.4	242	21	AAW59416	Arabidopsis thalia
587	6	4.4	130	22	ABG20501	Novel human diagno	660	6	4.4	242	22	AAW73449	Human secreted pro
588	6	4.4	130	22	AAW676048	Human colon cancer	661	6	4.4	248	22	AAW73449	Neisseria gonorrhe
589	6	4.4	132	22	ABG01519	Novel human diagno	662	6	4.4	253	21	AAW75451	Neisseria meningit
590	6	4.4	133	22	AAW93301	Human protein HP10	663	6	4.4	253	21	AAW75451	Neisseria meningit
591	6	4.4	136	19	AAW40228	Bovine myelin P2 p	664	6	4.4	255	22	ABW66124	Drosophila melanog
592	6	4.4	136	19	AAW40227	Human myelin P2 pr	665	6	4.4	255	22	AAU27717	Human full-length
593	6	4.4	139	18	AAW07852	(DSM 10104) human	666	6	4.4	262	18	AAW20758	H. pylori cytoplas
594	6	4.4	139	21	AAW40527	Human ORFX ORF291	667	6	4.4	264	21	AAW04977	Arabidopsis thalia
595	6	4.4	140	22	AAW82261	Human immune/haema	668	6	4.4	264	21	AAW40069	Arabidopsis thalia

669	6	4.4	264	22	AAW40361	Human polypeptide	742	6	4.4	411	20	AAW68011	Yeast immunophilin
670	6	4.4	264	22	AAW40361	Human protein sequ	743	6	4.4	412	17	AAW88760	FHV capsid protein
671	6	4.4	266	5	AAW40066	Sequence of HLA-DR	744	6	4.4	415	17	AAW88759	RHV capsid protein
672	6	4.4	272	19	AAW98616	H. pylori GPO 218	745	6	4.4	416	17	AAW07325	Oilpalm ACP thioes
673	6	4.4	281	21	AAW41300	Arabidopsis thalia	746	6	4.4	418	22	ABW62267	Drosophila melanog
674	6	4.4	281	21	AAW41300	D-ribulose-5-phosp	747	6	4.4	418	22	ABW62267	Novel human diagno
675	6	4.4	282	21	AAW404976	Arabidopsis thalia	748	6	4.4	425	21	AAW43667	Human cancer assoc
676	6	4.4	282	21	AAW404976	Arabidopsis thalia	749	6	4.4	425	22	AAW17061	Novel signal trans
677	6	4.4	285	21	AAW93265	Amino acid sequenc	750	6	4.4	428	18	AAW31516	Death domain conta
678	6	4.4	285	21	AAW93292	Amino acid sequenc	751	6	4.4	428	20	AAW95537	Death domain conta
679	6	4.4	287	20	AAW33556	B. oleracea CBF ho	752	6	4.4	428	21	AAW36264	Human death domain
680	6	4.4	290	22	ABW57881	Drosophila melanog	753	6	4.4	429	17	AAW02083	Nutmeg Class II th
681	6	4.4	290	22	ABW27708	Novel human diagno	754	6	4.4	431	22	AAW61906	Maize MSI-like pro
682	6	4.4	291	22	ABW10444	Human cDNA SEQ ID	755	6	4.4	432	22	AAW93370	Human polypeptide,
683	6	4.4	291	22	AAW23580	Novel human enzyme	756	6	4.4	434	22	AAW33491	Enterococcus faeca
684	6	4.4	297	22	AAW41541	Human polypeptide	757	6	4.4	436	21	AAW30975	Arabidopsis thalia
685	6	4.4	298	19	AAW41153	RBE1 transcription	758	6	4.4	440	12	AAW11515	Soybean chlorotic
686	6	4.4	308	22	ABW65833	Drosophila melanog	759	6	4.4	445	21	AAW07560	Arabidopsis thalia
687	6	4.4	310	22	AAW39755	Human polypeptide	760	6	4.4	445	21	AAW32039	Arabidopsis thalia
688	6	4.4	316	21	AAW404902	Arabidopsis thalia	761	6	4.4	445	22	ABW64465	Drosophila melanog
689	6	4.4	316	21	AAW59415	Arabidopsis thalia	762	6	4.4	446	21	AAW21121	Arabidopsis thalia
690	6	4.4	323	22	ABW03330	Novel human diagno	763	6	4.4	448	22	AAW35058	Enterococcus faeca
691	6	4.4	323	22	AAW95337	Human protein sequ	764	6	4.4	454	21	AAW30974	Arabidopsis thalia
692	6	4.4	325	22	ABW12474	Human bone marrow	765	6	4.4	455	22	ABW71982	Drosophila melanog
693	6	4.4	325	22	ABW93846	Human protein sequ	766	6	4.4	463	21	AAW52038	Arabidopsis thalia
694	6	4.4	329	22	ABW30054	Novel human diagno	767	6	4.4	464	22	AAW95171	Human protein sequ
695	6	4.4	331	20	AAW37572	Chlamydia trachoma	768	6	4.4	466	22	AAW52260	Propionibacterium
696	6	4.4	336	21	AAW95044	Candida albicans p	769	6	4.4	466	22	AAW94354	Human protein sequ
697	6	4.4	340	22	AAW93541	Human polypeptide,	770	6	4.4	467	22	AAW98450	Human papillomavir
698	6	4.4	343	21	AAW08505	Amino acid sequenc	771	6	4.4	468	21	AAW25860	55kD i-antigen pro
699	6	4.4	345	22	ABW67077	Drosophila melanog	772	6	4.4	468	21	AAW25882	Synthetic 55kD i-a
700	6	4.4	348	21	AAW40034	Arabidopsis thalia	773	6	4.4	468	21	AAW97177	55 kDa immobilizat
701	6	4.4	348	21	AAW44267	Arabidopsis thalia	774	6	4.4	469	12	AAW15510	Tomato ACC synthas
702	6	4.4	349	22	AAW50681	C. elegans i-beta-	775	6	4.4	469	21	AAW43666	Arabidopsis thalia
703	6	4.4	353	21	AAW17445	Arabidopsis thalia	776	6	4.4	476	21	AAW77959	A. thaliana enviro
704	6	4.4	353	22	ABW58942	Drosophila melanog	777	6	4.4	484	21	AAW43695	Human cancer assoc
705	6	4.4	355	17	AAW98154	Blowfly PM48 antig	778	6	4.4	484	22	AAW75119	Human colon cancer
706	6	4.4	358	21	AAW83004	Human Homer-3 Ho	779	6	4.4	486	22	ABW23447	Novel human diagno
707	6	4.4	359	17	AAW97868	Hamster polysialyl	780	6	4.4	486	22	ABW42295	Novel human diagno
708	6	4.4	361	21	AAW13695	Chlamydia sp. prot	781	6	4.4	489	22	AAW82769	S. epidermidis ope
709	6	4.4	361	21	AAW84607	A human membrane a	782	6	4.4	492	22	ABW18052	Novel human diagno
710	6	4.4	361	22	AAW83263	Protein encoded by	783	6	4.4	496	21	AAW25531	Eucalyptus grandis
711	6	4.4	362	17	AAW02082	Nutmeg Class II th	784	6	4.4	498	22	ABW47285	Enterococcus faeca
712	6	4.4	362	22	ABW60115	Drosophila melanog	785	6	4.4	501	21	AAW08508	Hybrid of fibronect
713	6	4.4	363	22	AAW96616	Putative P. abyssi	786	6	4.4	504	20	AAW93429	A. thaliana EL3 pr
714	6	4.4	364	22	AAW74049	Human colon cancer	787	6	4.4	507	22	AAW60080	Human breast cance
715	6	4.4	371	22	AAW94407	Human protein sequ	788	6	4.4	511	20	AAW78475	Autographa califor
716	6	4.4	372	18	AAW25048	BRCA2 cancer susce	789	6	4.4	521	22	ABW57765	Drosophila melanog
717	6	4.4	372	22	ABW09514	Novel human diagno	790	6	4.4	523	22	AAU34227	Staphylococcus aur
718	6	4.4	373	21	AAW09514	Arabidopsis thalia	791	6	4.4	525	22	AAU37058	Staphylococcus aur
719	6	4.4	381	22	ABW24300	Novel human diagno	792	6	4.4	530	20	AAW78476	Baculovirus ISP pr
720	6	4.4	382	22	ABW55608	Human protein sequ	793	6	4.4	533	19	AAW59442	Hordeum vulgare ML
721	6	4.4	383	22	ABW24293	Novel human diagno	794	6	4.4	533	19	AAW59443	Hordeum vulgare ML
722	6	4.4	385	21	AAW21122	Arabidopsis thalia	795	6	4.4	533	21	AAW03401	Barley Mlo protein
723	6	4.4	387	22	AAU41162	Propionibacterium	796	6	4.4	533	22	ABW59712	Drosophila melanog
724	6	4.4	388	22	AAW94002	Human protein sequ	797	6	4.4	534	21	AAW16317	Eucalyptus grandis
725	6	4.4	388	22	AAW95621	Human protein sequ	798	6	4.4	544	19	AAW59445	Hordeum vulgare ML
726	6	4.4	390	20	AAW42225	Human Toso protein	799	6	4.4	549	22	ABW13328	Novel human diagno
727	6	4.4	390	20	AAW17496	Human Toso protein	800	6	4.4	549	22	ABW35686	Novel human diagno
728	6	4.4	390	20	AAW05001	Human PIGRL-1 prot	801	6	4.4	552	22	ABW11079	Novel human diagno
729	6	4.4	390	22	ABW00984	Novel human diagno	802	6	4.4	556	22	ABW92747	C glutamicum prote
730	6	4.4	396	21	AAW43668	Arabidopsis thalia	803	6	4.4	557	22	ABW07606	Novel human diagno
731	6	4.4	400	21	ABW08509	Hybrid of fibronect	804	6	4.4	562	21	AAW67579	Human death induc
732	6	4.4	406	21	AAW94972	Human secreted pro	805	6	4.4	562	22	AAW93638	Human protein sequ
733	6	4.4	406	22	AAW47411	Human membrane ass	806	6	4.4	570	16	AAW67380	Jack bean urease u
734	6	4.4	406	22	AAW88600	Human hydrophobic	807	6	4.4	581	22	ABW63013	Drosophila melanog
735	6	4.4	407	17	AAW88755	Flock house virus	808	6	4.4	604	21	AAW43581	Human cancer assoc
736	6	4.4	407	17	AAW88758	FHV capsid protein	809	6	4.4	613	16	AAW74632	QETR ethylene resp
737	6	4.4	407	17	AAW22142	Flock House virus	810	6	4.4	613	19	AAW73122	A. thaliana ethyle
738	6	4.4	408	21	AAW43667	Arabidopsis thalia	811	6	4.4	614	21	AAW67580	Murine death induc
739	6	4.4	409	17	AAW88756	FHV capsid protein	812	6	4.4	615	16	AAW74630	Tomato fGTR1 ethy
740	6	4.4	410	17	AAW88757	FHV capsid protein	813	6	4.4	615	19	AAW73126	Tomato ethylene re
741	6	4.4	410	22	AAW03641	Human extracellular	814	6	4.4	615	22	ABW66477	Drosophila melanog

815	6	4.4	618	22	AAB96215	Putative P. abyssii	888	6	4.4	914	12	AAR15785	B.thuringiensis to
816	6	4.4	619	21	AAB42761	Human OREX ORF2525	889	6	4.4	917	18	AAW37437	Rat hexokinase II.
817	6	4.4	620	21	AAG92236	C glutamicum prote	890	6	4.4	917	18	AAW37429	Rat hexokinase II.
818	6	4.4	621	22	AAB79455	Corynebacterium g1	891	6	4.4	917	18	AAW23793	AS-30D tumour type
819	6	4.4	625	22	AAU36524	Pseudomonas aerugi	892	6	4.4	918	22	ABW59819	Drosophila melanog
820	6	4.4	631	20	AAU06899	Ethylene receptor	893	6	4.4	920	19	AAW82500	Human Ogr protein.
821	6	4.4	635	22	AAU19571	Human diagnostic a	894	6	4.4	920	21	AAV77291	Streptomyces cinna
822	6	4.4	637	20	AAU25004	Melon MEERS protei	895	6	4.4	920	21	AAV78843	Ksq-Atg loading di
823	6	4.4	647	22	AAW79235	Human protein, SEQ	896	6	4.4	931	20	AAV27357	Group B Streptococ
824	6	4.4	660	22	AAW28901	Human migration st	897	6	4.4	935	20	AAV31987	Alpha-ketoglutarat
825	6	4.4	660	22	AAU38921	C. trachomatis CT8	898	6	4.4	935	22	AAU00224	Succinate dehydrog
826	6	4.4	684	21	AAW58217	Lung cancer associ	899	6	4.4	952	22	ABG20628	Novel human diagno
827	6	4.4	698	22	AAW82647	S. epidermidis ope	900	6	4.4	956	12	AAR15784	B.thuringiensis to
828	6	4.4	699	22	ABW67414	Drosophila melanog	901	6	4.4	957	22	ABW64362	Drosophila melanog
829	6	4.4	707	22	ABG24674	Novel human diagno	902	6	4.4	970	22	AAW39217	Human polypeptide
830	6	4.4	710	22	ABG20363	Novel human diagno	903	6	4.4	976	22	AAW66581	Human SCP-1 mutein
831	6	4.4	715	22	AAW79737	Human protein, SEQ	904	6	4.4	995	21	AAW03129	Polyprotein (pol)
832	6	4.4	720	20	AAW28914	Fibronectin protel	905	6	4.4	1005	22	AAU63132	Protonibacterium
833	6	4.4	722	22	AAW82125	Alpha-1,3-multi-br	906	6	4.4	1016	22	ABW68593	Drosophila melanog
834	6	4.4	725	22	ABW63435	Drosophila melanog	907	6	4.4	1023	22	AAW11436	D. discoideum ster
835	6	4.4	738	16	AAW69849	Ethylene response	908	6	4.4	1028	22	ABG11837	Novel human diagno
836	6	4.4	738	16	AAW69850	Ethylene response	909	6	4.4	1028	22	ABG11837	Human polypeptide
837	6	4.4	738	16	AAW69851	Ethylene response	910	6	4.4	1042	22	ABW66302	Drosophila melanog
838	6	4.4	738	16	AAW69852	Ethylene response	911	6	4.4	1059	22	ABW59330	Drosophila melanog
839	6	4.4	738	16	AAW69853	Ethylene response	912	6	4.4	1059	22	ABW67407	Drosophila melanog
840	6	4.4	738	19	AAW73121	A. thaliana ethyle	913	6	4.4	1059	22	ABW67408	Drosophila melanog
841	6	4.4	738	19	AAW73117	A. thaliana ethyle	914	6	4.4	1062	22	ABG18301	Novel human diagno
842	6	4.4	738	19	AAW73118	A. thaliana ethyle	915	6	4.4	1062	22	AAW41002	Human polypeptide
843	6	4.4	738	19	AAW73119	A. thaliana ethyle	916	6	4.4	1062	22	AAW41003	Human polypeptide
844	6	4.4	738	19	AAW73120	A. thaliana ethyle	917	6	4.4	1068	22	AAW79228	Human protein SEQ
845	6	4.4	740	20	AAU25005	Melon MEETRI prote	918	6	4.4	1069	22	AAW38650	Human polypeptide
846	6	4.4	747	22	AAW05340	Rat hypothetical 1	919	6	4.4	1069	22	AAW68892	Human RECAP polype
847	6	4.4	749	16	AAW70233	P. falciparum PBL-	920	6	4.4	1070	18	AAW17789	Green fluorescent
848	6	4.4	749	16	AAW22479	Plasmodium ebl-1.	921	6	4.4	1078	22	AAW39300	Human polypeptide
849	6	4.4	749	21	AAW77901	P. falciparum ebl-	922	6	4.4	1083	20	AAV25169	Human RSC ligase p
850	6	4.4	754	20	AAW70727	Breast cancer asso	923	6	4.4	1088	22	AAW60212	Human protein SEQ
851	6	4.4	775	22	ABG22389	Novel human diagno	924	6	4.4	1088	22	AAW41086	Human polypeptide
852	6	4.4	775	22	ABG22389	Novel human diagno	925	6	4.4	1088	22	ABG20503	Novel human diagno
853	6	4.4	780	15	AAW62487	Truncated FLT sVEG	926	6	4.4	1089	22	ABG20503	B.thuringiensis to
854	6	4.4	780	19	AAW47039	Soluble truncated	927	6	4.4	1100	12	AAR15783	Novel human diagno
855	6	4.4	782	20	AAW68008	Human soluble vasc	928	6	4.4	1106	22	ABG25523	Human polypeptide
856	6	4.4	782	20	AAW5703	Grand fir monoterp	929	6	4.4	1118	22	AAW40436	Human polypeptide
857	6	4.4	782	21	AAW90853	Grand fir E-alpha-	930	6	4.4	1119	22	ABW63999	Drosophila melanog
858	6	4.4	782	22	ABW82629	S. epidermidis ope	931	6	4.4	1137	22	ABG28828	Novel human diagno
859	6	4.4	782	22	ABW69373	Grand fir abietadi	932	6	4.4	1151	19	AAW82501	C. elegans Ogr pro
860	6	4.4	787	22	AAW79253	Human protein, SEQ	933	6	4.4	1160	22	ABG28234	Novel human diagno
861	6	4.4	792	19	AAW41764	Human ribonucleoti	934	6	4.4	1166	20	AAV08643	S. aureus SdrE pro
862	6	4.4	795	21	AAW03138	Pol fragment 2 enc	935	6	4.4	1166	21	AAW25525	Pinus radiata cell
863	6	4.4	806	19	AAW75911	Helicobacter leucy	936	6	4.4	1173	22	ABG22275	Novel human diagno
864	6	4.4	806	22	AAU36029	Helicobacter pylor	937	6	4.4	1181	22	ABG24298	Novel human diagno
865	6	4.4	806	22	AAE00667	Human protein tyro	938	6	4.4	1190	22	ABG18357	Human protein SEQ
866	6	4.4	808	22	AAU33290	Novel human secret	939	6	4.4	1191	22	AAW80219	Human protein SEQ
867	6	4.4	811	16	AAW72737	Plasmodium falcipa	940	6	4.4	1196	22	ABG20502	Novel human diagno
868	6	4.4	817	20	AAV06562	Grand fir E-alpha-	941	6	4.4	1224	22	ABW64966	Drosophila melanog
869	6	4.4	817	20	AAV06566	Grand fir E-alpha-	942	6	4.4	1230	21	AAW16682	Bacteriophage Dp-1
870	6	4.4	817	20	AAV06567	E-alpha-bisabolene	943	6	4.4	1250	21	AAV91279	Human Ship-2 proce
871	6	4.4	832	22	ABW58973	Drosophila melanog	944	6	4.4	1258	21	AAW80120	Human tyrosine kin
872	6	4.4	833	20	AAW94058	Murine MSH5 (mMSH5	945	6	4.4	1258	22	AAV98987	Drosophila melanog
873	6	4.4	834	20	AAV06778	Amino acid sequenc	946	6	4.4	1273	21	AAV70751	Human type 2 SH2-d
874	6	4.4	834	20	AAW94057	Human MSH5 (hMSH5)	947	6	4.4	1283	22	ABW63594	Drosophila melanog
875	6	4.4	841	22	AAU34283	Staphylococcus aur	948	6	4.4	1283	22	ABW63599	Drosophila melanog
876	6	4.4	841	22	AAU37158	Staphylococcus aur	949	6	4.4	1311	21	AAV71001	Alternative versio
877	6	4.4	845	22	ABG14684	Novel human diagno	950	6	4.4	1316	21	AAW30505	A calcium-dependen
878	6	4.4	846	22	ABG25333	Novel human diagno	951	6	4.4	1325	22	ABG17665	A calcium-dependen
879	6	4.4	858	8	AAW70100	Sequence of elonga	952	6	4.4	1337	21	AAW30504	Amino acid sequenc
880	6	4.4	858	22	AAW79209	Human protein, SEQ	953	6	4.4	1338	22	AAW67446	Amino acid sequenc
881	6	4.4	858	22	AAW80193	Human protein, SEQ	954	6	4.4	1339	22	AAV97784	Human FLT-1 protei
882	6	4.4	861	22	AAW47601	CUL5. Unidentifie	955	6	4.4	1345	22	ABW63423	Drosophila melanog
883	6	4.4	875	19	AAW48309	Pisum sativum Acca	956	6	4.4	1349	22	AAU34402	Staphylococcus aur
884	6	4.4	877	20	AAV00938	M. prunae DNA poly	957	6	4.4	1349	22	AAU37544	Staphylococcus aur
885	6	4.4	898	22	ABW60194	Drosophila melanog	958	6	4.4	1398	17	AAW87008	Pyroco. Pyroco
886	6	4.4	903	17	AAW87007	Hyperthermostable	959	6	4.4	1398	18	AAW24124	Pyrococcus furiosu
887	6	4.4	912	16	AAW96969	Transferrin recept	960	6	4.4	1398	20	AAW94839	WO9856926 Seq ID 6

961 6 4.4 1421 22 ABG06099 Novel human diango
 962 6 4.4 1427 22 ABB60419 Drosophila melanog
 963 6 4.4 1450 18 AAW30751 Rat phospholipase-
 964 6 4.4 1452 22 ABB62684 Drosophila melanog
 965 6 4.4 1470 22 ABB61384 Drosophila melanog
 966 6 4.4 1558 21 AAB18324 Plasmodium falcipa
 967 6 4.4 1560 21 AAB18792 The human ribosome
 968 6 4.4 1649 22 AAG67800 Amino acid sequenc
 969 6 4.4 1649 22 AAB65663 Novel protein kina
 970 6 4.4 1651 22 AAE11781 Human kinase (PRIN
 971 6 4.4 1765 21 AAB19798 Human laminin 2 ma
 972 6 4.4 1765 21 AAB48449 Human laminin 8 po
 973 6 4.4 1785 20 AAV15461 Human laminin beta
 974 6 4.4 1786 18 AAW24790 P. falciparum live
 975 6 4.4 1786 21 AAB19797 Human laminin B1 c
 976 6 4.4 1786 21 AAB19797 Human laminin 2 be
 977 6 4.4 1786 21 AAB48448 Human laminin 8 po
 978 6 4.4 1786 21 AAB16522 Human laminin prot
 979 6 4.4 1786 22 AAB90788 Human shear stress
 980 6 4.4 1857 21 AAX53970 Human peripheral b
 981 6 4.4 1864 18 AAW22602 Tylosone synthase
 982 6 4.4 1893 22 ABB59829 Drosophila melanog
 983 6 4.4 1899 22 AAU31614 Novel human secret
 984 6 4.4 2030 22 ABB64300 Drosophila melanog
 985 6 4.4 2037 22 ABB69099 A murine phosphati
 986 6 4.4 2052 21 AAB08634 Cyclorella cryptic
 987 6 4.4 2099 17 AAW08333 HP1V-3 JS isolate
 988 6 4.4 2233 19 AAW48711 HP1V-3 FRhl cp45 v
 989 6 4.4 2233 19 AAW48712 HP1V-3 Vero cp45 v
 990 6 4.4 2233 19 AAW48713 Amino acid sequenc
 991 6 4.4 2233 21 AAB08626 Novel human diango
 992 6 4.4 2234 22 AAG00985 Human polypeptide
 993 6 4.4 2265 22 AAM38647 Bacillus subtilis
 994 6 4.4 2285 20 AAW98149 Human fibronectin
 995 6 4.4 2324 17 AAR92778 Human fibronectin
 996 6 4.4 2327 8 AAP70373 Human fibronectin.
 997 6 4.4 2327 12 AAB15468 Fibronectin protei
 998 6 4.4 2328 22 AAG68182 Partial BRCA2 canc
 999 6 4.4 2329 18 AAW25038 Human polypeptide
 1000 6 4.4 2330 22 AAM38646

ALIGNMENTS

RESULT 1
 AAW92263 ID AAW92263 standard; Protein: 135 AA.

XX AC AAW92263;

XX DT 08-JUN-1999 (first entry)

XX DE Human anti-angiogenic peptide 16K hPL Met-1Arg134.

XX KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
 KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
 KW placental vascularisation; pregnancy; treatment; angiogenic disease;
 KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
 KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
 KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
 KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
 KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
 KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
 KW gene therapy; pre-eclampsia; intrauterine growth retardation;
 KW placental dysfunction.

XX OS Homo sapiens.

XX PN WO9851323-A1.

XX XX 19-NOV-1998.

XX PD

XX XX

PF 12-MAY-1998; 98WO-US09691.

XX 13-MAY-1997; 97US-0046394.

PR (REGC) UNIV CALIFORNIA.

XX Martial JA, Struman I, Taylor R, Weiner RI;

PI WPI; 1999-045192/04.

XX N-PSDB; AAX01703.

XX New anti-angiogenic peptides - comprise N-terminal fragments of

DR human placental lactogen, human growth hormone, growth hormone

DR variant or human prolactin

XX Claim 3; Page 47; 87pp; English.

XX This invention describes novel human anti-angiogenic peptides derived

CC from 10 to 150 consecutive amino acids selected from the N-terminal end

CC of human placental lactogen (hPL), human growth hormone (hGH), growth

CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit

CC capillary endothelial cell proliferation and organisation (ii) inhibit

CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at

CC least one specific receptor which does not bind an intact full length

CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for

CC diagnosing a probable abnormality of placental vascularisation during

CC pregnancy. The peptides can be used for treating an angiogenic disease in

CC a subject, for inhibiting tumour formation or growth in a patient or for

CC modulating vascularisation of a patient's placenta. In particular, the

CC peptides can be used for preventing or treating e.g. malignant tumours,

CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid

CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,

CC delayed wound healing, proliferative retinopathy such as diabetic

CC retinopathy, macular degeneration, granulations such as those occurring

CC in haemophilic joints, inappropriate vascularisation in wound healing

CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular

CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,

CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,

CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,

CC leukaemia, and reproductive disorders such as follicular and luteal cysts

CC and choriocarcinoma. They can also be used as contraceptive agents. DNA

CC encoding the peptides can be used in gene therapy. The measurement of

CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL

CC can be used in assays for impairment of vascular development associated

CC with pre-eclampsia, intrauterine growth retardation, and placental

CC dysfunction.

XX Sequence 135 AA;

Query Match 100.0%; Score 135; DB 20; Length 135;

Best Local Similarity 100.0%; Pred. No. 2.4e-126;

Matches 135; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MVQTVPLSLFDPHMLQAHRAHOLAIDTVORPEEYVIPKDKYSFLHDSQTSFSDSIP 60

Db 1 mvqtvplsrlfrfhamqahrahaqdaityqefecyfpkdkysflhdsqtsfsdsip 60

Qy 61 TPSNMEETQOKSNLELRISLILLIESWLEPVRFLRSMFANNLVDTSDSDYHLLKDL 120

Db 61 tpsnmeetqoksnlelrslillieswleprflrsmfannlvdytdsdsdyhllkdl 120

Qy 121 GIQTLMGRLEDGSPR 135

Db 121 giqtlmgrledgspr 135

RESULT 2

AAAY31765

ID AAY31765 standard; Protein: 191 AA.

XX AC AAY31765;

XX XX

DT 06-DEC-1999 (first entry)
 XX Human placental lactogen.
 XX Placental lactogen; hPL; human; variant; protein engineering.
 XX Homo sapiens.
 OS
 XX
 XX
 FH Key Location/Qualifiers
 XX Misc-difference 2 /note= "optionally substituted by Pro in hPL
 FT variant of Claim 24"
 FT Misc-difference 4 /note= "optionally substituted by Ile in hPL
 FT variant of Claim 24, and by Ala in hPL
 FT variant of Claim 25"
 FT Misc-difference 12 /note= "optionally substituted by Asn in hPL
 FT variant of Claim 24"
 FT Misc-difference 16 /note= "optionally substituted by Arg in hPL
 FT variant of Claim 24"
 FT Misc-difference 56 /note= "optionally substituted by Glu in hPL
 FT variant of Claim 24, and by Ala in hPL
 FT variant of Claim 25"
 FT Misc-difference 64 /note= "optionally substituted by Arg in hPL
 FT variant of Claim 24, and by Ala in hPL
 FT variant of Claim 25"
 FT Misc-difference 179 /note= "optionally substituted by Ile in hPL
 FT variant of Claim 24, and by Ala in hPL
 FT variant of Claim 25"
 XX US5955346-A.
 XX
 XX 21-SEP-1999.
 XX
 XX 07-JUN-1995; 95US-0476999.
 XX
 XX 02-FEB-1994; 94US-0190723.
 XX 26-OCT-1989; 89US-0428066.
 XX 27-APR-1992; 92US-0875204.
 XX 13-OCT-1992; 92US-0960227.
 XX 28-OCT-1988; 88US-0264611.
 XX
 XX (GETH) GENENTECH INC.
 XX
 XX Cunnigham BC, Wells JA;
 XX WPI; 1999-560495/47.
 XX
 XX Isolated nucleic acids encoding variants of human prolactin and
 XX placental lactogen useful for identifying active domains within those
 XX proteins -
 XX
 XX Claim 23; Fig 2; 86pp; English.
 XX
 XX This is the amino acid sequence of human placental lactogen (hPL).
 XX The invention provides a method for the systematic analysis of the
 XX structure and function of polypeptides by identifying active domains
 XX which influence the activity of the polypeptide with a target
 XX substance, and a method for identifying the active amino acid
 XX residues within the active domain of a polypeptide. It also
 XX provides polypeptide variants comprising segment-substituted and
 XX residue-substituted growth hormones, prolactins and placental
 XX lactogens. Claimed variants of hPL have 1-4 amino acid
 XX substitutions when compared to the wild-type sequence, selected
 XX from Q2P, V4I, H12N, Q16R, D56E, M64R and M179I, or V4A, D56A,
 XX M64A, M179A. These mutations inactivate the active domains and
 XX binding sites of the protein. Identifying receptor binding sites
 XX in hormones permits the rational design of receptor specific

CC variants. Nucleic acids encoding the variants, expression vectors
 CC and host cells are also claimed.
 XX
 XX Sequence 191 AA;
 SQ
 Query Match 58.5%; Score 79; DB 20; Length 191;
 Best Local Similarity 100.0%; Pred. No. 1.5e-70;
 Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 55 FSDSTPTSPNMEETQOKSNLELLRISLLIESWLEPVRFLRSMFANNLYDTSDSDYHL 114
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 DB 54 fdsdptpsnmeetqgksnlellrisllieswlepvrfllrsmfannlvdytsddghl 113
 ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 QY 115 LKDL EEGIOTLMGRLE DGS 133
 ||||||||||||||||||||
 DB 114 lkdl eegiqt lmg rldgs 132
 ||||||||||||||||||||
 RESULT 3
 AAY78426
 ID AAY78426 standard; Protein; 191 AA.
 XX
 AC AAY78426;
 XX
 DT 09-MAY-2000 (first entry)
 XX
 DE Human placental lactogen amino acid sequence.
 XX
 KW Human growth hormone; hGH; prolactin; placental lactogen;
 KW modification; mutagenesis.
 XX
 OS Homo sapiens.
 XX
 PN US6013478-A.
 XX
 PD 11-JAN-2000.
 XX
 PF 24-JUN-1998; 98US-0104036.
 XX
 PR 26-OCT-1989; 89US-0428066.
 PR 27-APR-1992; 92US-0875204.
 PR 13-OCT-1992; 92US-0960227.
 PR 02-FEB-1994; 94US-0190723.
 PR 06-JUN-1995; 95US-0483039.
 PR 30-JUN-1997; 97US-0903398.
 PR 28-OCT-1988; 88US-0264611.
 XX
 PA (GETH) GENENTECH INC.
 XX
 PI Wells JA, Cunnigham BC;
 XX
 XX WPI; 2000-159873/14.
 DR
 XX Recombinant production of variant polypeptides, e.g. growth hormone
 PT variants with altered receptor specificity, using cells transformed
 PT with DNA selected by scanning mutagenesis in at least one peptide
 PT domain
 XX
 XX Example 2; Fig 2; 83pp; English.
 PS
 XX The present invention describes the production of a polypeptide variant
 CC (1) comprising segment substituted and residue substituted growth
 CC hormone, prolactin or placental lactogens. The method is particularly
 CC used to produce variants of growth hormone (GH), prolactin or placental
 CC lactogen, but may also be applied to receptors, interferons, and
 CC colony-stimulating factors. A particular application is the production
 CC of human GH variants with altered (decreased or increased) binding
 CC interaction with the somatogenic receptor, i.e. compounds useful as
 CC human GH (ant)agonists and which may have higher potency for stimulating
 CC other human GH receptors, and as standards or tracers in immunoassays
 CC for human GH. This method of DNA selection identifies the biologically
 CC active residues in active domains, including those critical for

CC Interaction with different targets. The present sequence represents a
 CC human placental lactogen amino acid sequence, which is used in the
 CC exemplification of the present invention.

XX
 SQ Sequence 191 AA;

Query Match 58.5%; Score 79; DB 21; Length 191;
 Best Local Similarity 100.0%; Pred. No. 1.5e-70;
 Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 55 FSDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRFLRSMFANNLYDYDSDSDYHL 114
 |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 54 fdsdptpsnmeetqkqnlellrslslieswlepvrlfrsmfannlvdytsddylh 113
 |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Qy 115 LKDLLEGIGIOTLMGRLEDGS 133
 |||||||||||||||||||
 Db 114 lkdleegigtlmgrledgs 132
 |||||||||||||||||||

RESULT 4
 AAW92262
 ID AAW92262 standard; Protein; 192 AA.
 AC AAW92262;
 XX
 XX 08-JUN-1999 (first entry)
 XX
 XX Human anti-angiogenic peptide hPL Met-1Phe191.
 XX
 XX Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
 KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
 KW placental vascularisation; pregnancy; treatment; angiogenic disease;
 KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
 KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
 KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
 KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
 KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
 KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
 KW gene therapy; pre-eclampsia; intrauterine growth retardation;
 KW placental dysfunction.
 XX
 XX Homo sapiens.
 OS
 PN WO9851323-A1.
 XX
 XX 19-NOV-1998.
 PD
 XX
 XX 12-MAY-1998; 98WO-US09691.
 PF
 XX
 XX 13-MAY-1997; 97US-0046394.
 PR
 XX
 XX (REGC) UNIV CALIFORNIA.
 PA
 XX
 XX Martial JA, Struman I, Taylor R, Weiner RI;
 PI
 XX
 XX WPT; 1998-045192/04.
 DR
 DR N-PSDB; AAX01702.
 XX
 XX New anti-angiogenic peptides - comprise N-terminal fragments of
 PT human placental lactogen, human growth hormone, growth hormone
 PT variant or human prolactin
 XX
 XX Example 3; Page 47; 87pp; English.
 XX
 XX This invention describes novel human anti-angiogenic peptides derived
 CC from 10 to 150 consecutive amino acids selected from the N-terminal end
 CC of human placental lactogen (hPL), human growth hormone (hGH), growth
 CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
 CC capillary endothelial cell proliferation and organisation (ii) inhibit
 CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
 CC least one specific receptor which does not bind an intact full length
 CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for

CC diagnosing a probable abnormality of placental vascularisation during
 CC pregnancy. The peptides can be used for treating an angiogenic disease in
 CC a subject, for inhibiting tumour formation or growth in a patient or for
 CC modulating vascularisation of a patient's placenta. In particular, the
 CC peptides can be used for preventing or treating e.g. malignant tumours,
 CC angiofibroma, arteriovenous malformation, arthritis such as rheumatoid
 CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
 CC delayed wound healing, proliferative retinopathy such as diabetic
 CC retinopathy, macular degeneration, granulations in wound healing
 CC in haemophilic joints, inappropriate vascularisation in wound healing
 CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
 CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
 CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
 CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
 CC leukaemia, and reproductive disorders such as follicular and luteal cysts
 CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
 CC encoding the peptides can be used in gene therapy. The measurement of
 CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
 CC can be used in assays for impairment of vascular development associated
 CC with pre-eclampsia, intrauterine growth retardation, and placental
 CC dysfunction.
 XX
 XX SQ Sequence 192 AA;

Query Match 58.5%; Score 79; DB 20; Length 192;
 Best Local Similarity 100.0%; Pred. No. 1.5e-70;
 Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 55 FSDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRFLRSMFANNLYDYDSDSDYHL 114
 |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
 Db 55 fdsdptpsnmeetqkqnlellrslslieswlepvrlfrsmfannlvdytsddylh 114
 |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Qy 115 LKDLLEGIGIOTLMGRLEDGS 133
 |||||||||||||||||||
 Db 115 lkdleegigtlmgrledgs 133
 |||||||||||||||||||

RESULT 5
 AAC004730
 ID AAC004730 standard; Protein; 135 AA.
 XX
 AC AAC004730;
 XX
 XX 06-NOV-2001 (first entry)
 DT
 XX
 XX Human polypeptide SEQ ID NO 18622.
 DE
 XX
 XX Human; cytokine; cell proliferation; cell differentiation; gene therapy;
 KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
 KW tissue growth factor; immunomodulatory; cancer; leukaemia;
 KW nervous system disorders; arthritis; inflammation.
 XX
 XX Homo sapiens.
 OS
 XX
 XX WO200164835-A2.
 PN
 XX
 XX 07-SEP-2001.
 PD
 XX
 XX 26-FEB-2001; 2001WO-US04927.
 PF
 XX
 XX 28-FEB-2000; 2000US-0515126.
 PR
 PR 18-MAY-2000; 2000US-0577409.
 XX
 XX (HYSE-) HYSEQ INC.
 PA
 XX
 XX Tang YT, Liu C, Drmanac RT;
 PI
 XX
 XX WPI: 2001-514838/56.
 DR
 DR N-PSDB; AAI84661.
 XX
 XX Isolated nucleic acids and polypeptides, useful for preventing
 PT diagnosing and treating e.g. leukaemia, inflammation and immune

disorders -

Claim 20; SEQ ID NO 18622; 1399pp + Sequence Listing; English.

The invention relates to human polynucleotides (AAI79941-AAI93841) and the encoded proteins (AAO0010-AAO13910) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activin/inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and inflammation.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.

Sequence 135 AA;

Query Match 54.1%; Score 73; DB 22; Length 135;
Best Local Similarity 100.0%; Pred. No. 1e-64; Mismatches 0; Indels 0; Gaps 0;
Matches 73; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

55 FSDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRLRSMFANNLVYDTSDDYHL 114
|||||
26 fdsdpsnmeetqkksnlellrisllieswlepvrflrsmfannlvdytsdsdyl 85
|||||

115 LKDLKEGIQTLMG 127
|||||
86 lkdlkeegigtmg 98
|||||

RESULT 6
AAO04735
ID AAO04735 standard; Protein; 129 AA.
AC AAO04735;
XX
XX
DT 06-NOV-2001 (first entry)
DE Human polypeptide SEQ ID NO 18627.
XX
KW Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.
XX
OS Homo sapiens.
XX
PN WO200164835-A2.
XX
PD 07-SEP-2001.
XX
PF 26-FEB-2001; 2001WO-US04927.
XX
PR 28-FEB-2000; 2000US-0515126.
PR 18-MAY-2000; 2000US-0577409.
XX
PA (HYSE-) HYSEQ INC.
XX
PI Tang YT, Liu C, Drmanac RT;
XX
DR WPI; 2001-514838/56.
DR N-PSDB; AAI84666.
XX
XX Isolated nucleic acids and polypeptides, useful for preventing
PT diagnosing and treating e.g. leukaemia, inflammation and immune
PT disorders -
XX
PS Claim 20; SEQ ID NO 18622; 1399pp + Sequence Listing; English.

disorders -

Claim 20; SEQ ID NO 18622; 1399pp + Sequence Listing; English.

The invention relates to human polynucleotides (AAI79941-AAI93841) and the encoded proteins (AAO0010-AAO13910) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activin/inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and inflammation.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.

Sequence 129 AA;

Query Match 51.9%; Score 70; DB 22; Length 129;
Best Local Similarity 100.0%; Pred. No. 9.4e-62; Mismatches 0; Indels 0; Gaps 0;
Matches 70; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

64 NMEETQKSNLELLRISLLIESWLEPVRLRSMFANNLVYDTSDDYHLLKLEEGIQ 123
|||||
15 nmeetqkksnlellrisllieswlepvrflrsmfannlvdytsdsddylhkleeegiq 74
|||||

124 TLMGRLEDGS 133
|||||
75 tlmgrledgs 84
|||||

RESULT 7
AAO12412
ID AAO12412 standard; Protein; 115 AA.
XX
AC AAO12412;
XX
DT 06-NOV-2001 (first entry)
XX
DE Human polypeptide SEQ ID NO 26304.
XX
KW Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.
XX
OS Homo sapiens.
XX
PN WO200164835-A2.
XX
PD 07-SEP-2001.
XX
PF 26-FEB-2001; 2001WO-US04927.
XX
PR 28-FEB-2000; 2000US-0515126.
PR 18-MAY-2000; 2000US-0577409.
XX
PA (HYSE-) HYSEQ INC.
XX
PI Tang YT, Liu C, Drmanac RT;
XX
DR WPI; 2001-514838/56.
DR N-PSDB; AAI92343.
XX
XX Isolated nucleic acids and polypeptides, useful for preventing
PT diagnosing and treating e.g. leukaemia, inflammation and immune
PT disorders -
XX
PS Claim 20; SEQ ID NO 26304; 1399pp + Sequence Listing; English.
XX
XX The invention relates to human polynucleotides (AAI79941-AAI93841) and
CC the encoded proteins (AAO0010-AAO13910) that exhibit activity elating to

CC cytokine, cell proliferation or cell differentiation or which may induce
CC production of other cytokines in other cell populations. The
CC polynucleotides and polypeptides are useful in gene therapy, vaccines or
CC peptide therapy. The polypeptides have various cytokine-like activities,
CC e.g. stem cell growth factor activity, haematopoiesis regulating
CC activity, tissue growth factor activity, immunomodulatory activity and
CC activin/inhibin activity and may be useful in the diagnosis and/or
CC treatment of cancer, leukaemia, nervous system disorders, arthritis and
CC inflammation.
CC Note: The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX SQ Sequence 115 AA;

Query Match 38.5%; Score 52; DB 22; Length 115;
Best Local Similarity 100.0%; Pred. No. 6.6e-44;
Matches 52; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 2 VQTVP LSR LFDHMLQAHRAHQLAIDTYQFEETYPKDKYSFLHDSQTSF 53
Db 28 vqtpvlslrldhamlqahrahqlaidtyqfeetyipkdkysflhdsqtsf 79

RESULT 8

AAU25914
ID AAM25914 standard; Protein; 145 AA.

AC AAM25914;

DT 16-OCT-2001 (first entry)

DE Human protein sequence SEQ ID NO:1429.

XX Human; cancer; ulcer; HIV infection; human immunodeficiency virus;
KW antiinflammatory; antirheumatic; antiarthritic; immunosuppressive;
KW antibacterial; endocrine; cardiant; central nervous system; virucide;
KW anti-HIV; fungicide; antimutagen; cardiovascular; antianaemic; anaemia;
KW antiaggregant; haemostatic; vulnery; antiulcer; osteopathic; cytostatic;
KW dermatological; antiatheric; antiasthmatic; antidiabetic; cytostatic;
KW neuroprotective; antidepressant; nootropic; antiparkinsonian; infection;
KW immunostimulant; gene therapy; antisenese therapy; vaccine; inflammation;
KW antianaphylactic; rheumatoid arthritis; septic shock; pancreatitis;
KW cardiac dysfunction; neuropathology; cardiac anaphylaxis; autoimmunity;
KW genetic disease; haematopoietic disorder; platelet disorder; asthma;
KW thrombocytopaenia; osteoporosis; severe combined immunodeficiency;
KW allergic rhinitis; diabetes; multiple sclerosis; depression;
KW Alzheimer's disease; Parkinson's disease; neurodegenerative disorder;
KW neurological disorder.

XX Homo sapiens.

XX WO200153455-A2.

XX 26-JUL-2001.

XX 22-DEC-2000; 2000WO-US35017.

XX 23-DEC-1999; 99US-0471275.

XX 21-JAN-2000; 2000US-0488725.

XX 25-APR-2000; 2000US-0552317.

XX (HYSE-) HYSEQ INC.

XX Tang YT, Liu C, Drmanac RT;

XX WPI; 2001-457603/49.

XX N-PSDB; AAH99855.

XX Isolated human polynucleotides encoding polypeptides, useful for the

PT treatment and diagnosis of e.g. cancer, ulcers and HIV infection -

PS Claim 20; Page 289; 1217pp; English.
XX AAH99166 to AAH99904 encode the human proteins given in AAM25225 to
CC AAM25963. The proteins can have activities based on the tissues and
CC cells they are expressed in, such as: antiinflammatory; antirheumatic;
CC antiarthritic; immunosuppressive; antibacterial; endocrine; cardiant;
CC central nervous system; virucide; anti-HIV; fungicide; antimutagen;
CC cardiovascular; antianaemic; antiaggregant; haemostatic; vulnery;
CC antiulcer; osteopathic; dermatological; antiatheric; cytostatic;
CC antidiabetic; cytostatic; neuroprotective; antidepressant; nootropic;
CC antiparkinsonian; and immunostimulant. The proteins and polynucleotides
CC encoding them can be used in gene therapy, antisenese therapy and vaccine
CC production. The proteins and polynucleotides are useful for screening for
CC agonists or antagonists of a protein and for the treatment and diagnosis
CC of disorders associated with the activity of a protein e.g. inflammation,
CC rheumatoid arthritis, septic shock, pancreatitis, cardiac dysfunction,
CC neuropathology, cardiac anaphylaxis, viral, bacterial, HIV and fungal
CC infections, autoimmunity, genetic diseases, haematopoietic disorders,
CC anaemia, platelet disorders, thrombocytopaenia, wounds, burns, ulcers,
CC osteoporosis, severe combined immunodeficiency, eczema, allergic
CC rhinitis, asthma, diabetes, cancer, multiple sclerosis, depression,
CC Alzheimer's disease, Parkinson's disease, neurodegenerative and
CC neurological disorders.
XX SQ Sequence 145 AA;

Query Match 38.5%; Score 52; DB 22; Length 145;
Best Local Similarity 100.0%; Pred. No. 8e-44;
Matches 52; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 VQTVP LSR LFDHMLQAHRAHQLAIDTYQFEETYPKDKYSFLHDSQTSF 53
Db 47 vqtpvlslrldhamlqahrahqlaidtyqfeetyipkdkysflhdsqtsf 98

RESULT 9

AAU21684
ID AAU21684 standard; Protein; 229 AA.

AC AAU21684;

DT 04-DEC-2001 (first entry)

XX Novel human neoplastic disease associated polypeptide #117.

DE Human; neoplastic disease associated polypeptide; cancer;
KW hyperproliferative disorder; neural disorder; immune system disorder;
KW muscular disorder; reproductive disorder; gastrointestinal disorder;
KW pulmonary disorder; cardiovascular disorder; renal disorder;
KW neuroprotective; cytostatic; anti inflammatory; vasotropic.

XX Homo sapiens.

XX WO200155163-A1.

XX 02-AUG-2001.

XX 17-JAN-2001; 2001WO-US01358.

XX 31-JAN-2000; 2000US-0179065.

XX 04-FEB-2000; 2000US-0180628.

XX 24-FEB-2000; 2000US-0184664.

XX 02-MAR-2000; 2000US-0186350.

XX 16-MAR-2000; 2000US-0189874.

XX 17-MAR-2000; 2000US-0190076.

XX 18-APR-2000; 2000US-0198123.

XX 19-MAY-2000; 2000US-0205515.

XX 07-JUN-2000; 2000US-0209467.

XX 28-JUN-2000; 2000US-0214886.

XX 30-JUN-2000; 2000US-0215135.

XX 07-JUL-2000; 2000US-0216647.

XX 07-JUL-2000; 2000US-0216880.

PR 11-JUL-2000; 2000US-02117487.
 PR 11-JUL-2000; 2000US-02117496.
 PR 14-JUL-2000; 2000US-0218290.
 PR 26-JUL-2000; 2000US-0220963.
 PR 26-JUL-2000; 2000US-0220964.
 PR 14-AUG-2000; 2000US-0224518.
 PR 14-AUG-2000; 2000US-0224519.
 PR 14-AUG-2000; 2000US-0225213.
 PR 14-AUG-2000; 2000US-0225214.
 PR 14-AUG-2000; 2000US-0225266.
 PR 14-AUG-2000; 2000US-0225267.
 PR 14-AUG-2000; 2000US-0225268.
 PR 14-AUG-2000; 2000US-0225270.
 PR 14-AUG-2000; 2000US-0225447.
 PR 14-AUG-2000; 2000US-0225757.
 PR 14-AUG-2000; 2000US-0225758.
 PR 14-AUG-2000; 2000US-0225759.
 PR 18-AUG-2000; 2000US-0226279.
 PR 22-AUG-2000; 2000US-0226681.
 PR 22-AUG-2000; 2000US-0226686.
 PR 22-AUG-2000; 2000US-0227182.
 PR 23-AUG-2000; 2000US-0227009.
 PR 30-AUG-2000; 2000US-0228924.
 PR 01-SEP-2000; 2000US-0229287.
 PR 01-SEP-2000; 2000US-0229343.
 PR 01-SEP-2000; 2000US-0229344.
 PR 01-SEP-2000; 2000US-0229345.
 PR 05-SEP-2000; 2000US-0229509.
 PR 05-SEP-2000; 2000US-0229513.
 PR 06-SEP-2000; 2000US-0230437.
 PR 06-SEP-2000; 2000US-0230438.
 PR 08-SEP-2000; 2000US-0231242.
 PR 08-SEP-2000; 2000US-0231243.
 PR 08-SEP-2000; 2000US-0231244.
 PR 08-SEP-2000; 2000US-0231413.
 PR 08-SEP-2000; 2000US-0231414.
 PR 08-SEP-2000; 2000US-0232080.
 PR 08-SEP-2000; 2000US-0232081.
 PR 12-SEP-2000; 2000US-0231968.
 PR 14-SEP-2000; 2000US-0232397.
 PR 14-SEP-2000; 2000US-0232398.
 PR 14-SEP-2000; 2000US-0232399.
 PR 14-SEP-2000; 2000US-0232400.
 PR 14-SEP-2000; 2000US-0232401.
 PR 14-SEP-2000; 2000US-0233063.
 PR 14-SEP-2000; 2000US-0233064.
 PR 14-SEP-2000; 2000US-0233065.
 PR 21-SEP-2000; 2000US-0234223.
 PR 21-SEP-2000; 2000US-0234274.
 PR 25-SEP-2000; 2000US-0234997.
 PR 25-SEP-2000; 2000US-0234998.
 PR 26-SEP-2000; 2000US-0235484.
 PR 27-SEP-2000; 2000US-0235834.
 PR 27-SEP-2000; 2000US-0235836.
 PR 29-SEP-2000; 2000US-0236327.
 PR 29-SEP-2000; 2000US-0236367.
 PR 29-SEP-2000; 2000US-0236368.
 PR 29-SEP-2000; 2000US-0236369.
 PR 29-SEP-2000; 2000US-0236370.
 PR 02-OCT-2000; 2000US-0236802.
 PR 02-OCT-2000; 2000US-0237037.
 PR 02-OCT-2000; 2000US-0237038.
 PR 02-OCT-2000; 2000US-0237039.
 PR 02-OCT-2000; 2000US-0237040.
 PR 13-OCT-2000; 2000US-0239935.
 PR 13-OCT-2000; 2000US-0239937.
 PR 20-OCT-2000; 2000US-0240960.
 PR 20-OCT-2000; 2000US-0241221.
 PR 20-OCT-2000; 2000US-0241785.
 PR 20-OCT-2000; 2000US-0241786.
 PR 20-OCT-2000; 2000US-0241787.
 PR 20-OCT-2000; 2000US-0241808.
 PR 20-OCT-2000; 2000US-0241809.

PR 20-OCT-2000; 2000US-0241826.
 PR 01-NOV-2000; 2000US-0244617.
 PR 08-NOV-2000; 2000US-0246474.
 PR 08-NOV-2000; 2000US-0246475.
 PR 08-NOV-2000; 2000US-0246476.
 PR 08-NOV-2000; 2000US-0246477.
 PR 08-NOV-2000; 2000US-0246478.
 PR 08-NOV-2000; 2000US-0246523.
 PR 08-NOV-2000; 2000US-0246524.
 PR 08-NOV-2000; 2000US-0246525.
 PR 08-NOV-2000; 2000US-0246526.
 PR 08-NOV-2000; 2000US-0246527.
 PR 08-NOV-2000; 2000US-0246528.
 PR 08-NOV-2000; 2000US-0246532.
 PR 08-NOV-2000; 2000US-0246609.
 PR 08-NOV-2000; 2000US-0246610.
 PR 08-NOV-2000; 2000US-0246611.
 PR 08-NOV-2000; 2000US-0246613.
 PR 17-NOV-2000; 2000US-0249207.
 PR 17-NOV-2000; 2000US-0249208.
 PR 17-NOV-2000; 2000US-0249209.
 PR 17-NOV-2000; 2000US-0249210.
 PR 17-NOV-2000; 2000US-0249211.
 PR 17-NOV-2000; 2000US-0249212.
 PR 17-NOV-2000; 2000US-0249213.
 PR 17-NOV-2000; 2000US-0249214.
 PR 17-NOV-2000; 2000US-0249215.
 PR 17-NOV-2000; 2000US-0249216.
 PR 17-NOV-2000; 2000US-0249217.
 PR 17-NOV-2000; 2000US-0249218.
 PR 17-NOV-2000; 2000US-0249244.
 PR 17-NOV-2000; 2000US-0249245.
 PR 17-NOV-2000; 2000US-0249264.
 PR 17-NOV-2000; 2000US-0249265.
 PR 17-NOV-2000; 2000US-0249266.
 PR 17-NOV-2000; 2000US-0249297.
 PR 17-NOV-2000; 2000US-0249299.
 PR 17-NOV-2000; 2000US-0249300.
 PR 01-DEC-2000; 2000US-0250160.
 PR 01-DEC-2000; 2000US-0250391.
 PR 05-DEC-2000; 2000US-0251030.
 PR 05-DEC-2000; 2000US-0251988.
 PR 05-DEC-2000; 2000US-0256719.
 PR 06-DEC-2000; 2000US-0251479.
 PR 08-DEC-2000; 2000US-0251856.
 PR 08-DEC-2000; 2000US-0251868.
 PR 08-DEC-2000; 2000US-0251869.
 PR 08-DEC-2000; 2000US-0251989.
 PR 11-DEC-2000; 2000US-0251990.
 PR 05-JAN-2001; 2000US-0254097.
 PR 05-JAN-2001; 2000US-0259678.
 XX
 (HUMA-) HUMAN GENOME SCI INC.
 Rosen CA, Barash SC, Ruben SM;
 WPI; 2001-465558/50.
 N-PSDB; AAS34883.
 Novel polypeptides and polynucleotides useful as diagnostic reagents to
 diagnose diseases or disorders associated with aberrant expression or
 activity of polypeptides, and for treating cancers, rheumatoid
 arthritis -
 Claim 11; SEQ ID No 411; 687pp; English.
 The present invention relates to the isolation of novel human neoplastic
 disease associated polypeptides, and cDNA (AAS34767-AAS35050) and DNA
 sequences encoding for these polypeptides. The sequences of the
 invention are useful in the diagnosis, treatment, prevention and/or
 prognosis of disorders involving neoplastic disease such as
 hyperproliferative disorders (e.g. leukaemia, bone cancer, bladder
 cancer, brain stem glioma, adult liver cancer, childhood cerebellar
 astrocytoma, or Hodgkin's lymphoma). The sequences of the invention may

CC also be useful for treating other disorders such as neural disorders,
CC immune system disorders, muscular disorders, reproductive disorders,
CC gastrointestinal disorders, pulmonary disorders, cardiovascular disorders,
CC and renal disorders. The polynucleotide sequences of the invention are
CC also useful in gene therapy. AAU21568-AAU21851 represent the novel human
CC neoplastic disease associated polypeptides of the invention.
CC Note: The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX
SQ Sequence 229 AA;

Query Match 38.5%; Score 52; DB 22; Length 229;
Best Local Similarity 100.0%; Pred. No. 1.2e-43;
Matches 52; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 VQTPLSLRFLPHAMLQAHRAHQLAIDTYQEFEEYIPKDKYSLFHDQSOTSF 53

Db 52 VQTPLSLRFLPHAMLQAHRAHQLAIDTYQEFEEYIPKDKYSLFHDQSOTSF 103

RESULT 10

AAO05545

ID AAO05545 standard; Protein; 75 AA.

XX AAO05545;

XX 06-NOV-2001 (first entry)

XX Human polypeptide SEQ ID NO 19437.

XX Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.

XX Homo sapiens.

XX WO200164835-A2.

XX 07-SEP-2001.

XX 26-FEB-2001; 2001WO-US04927.

XX 28-FEB-2000; 2000US-0515126.

XX 18-MAY-2000; 2000US-0577409.

XX (HYSE-) HYSEQ INC.

XX Tang YT, Liu C, Drmanac RT;

XX WPI: 2001-514838/56.

XX N-PSDB; AAI85476.

XX Isolated nucleic acids and polypeptides, useful for preventing
PT diagnosing and treating e.g. leukaemia, inflammation and immune
PT disorders -

XX Claim 20; SEQ ID NO 19437; 1399pp + Sequence Listing; English.

XX The invention relates to human polynucleotides (AAI79941-AAI93841) and
CC the encoded proteins (AAO00010-AAO13910) that exhibit activity elating to
CC cytokine, cell proliferation or cell differentiation or which may induce
CC production of other cytokines in other cell populations. The
CC polynucleotides and polypeptides are useful in gene therapy, vaccines or
CC peptide therapy. The polypeptides have various cytokine-like activities,
CC e.g. stem cell growth factor activity, haematopoiesis regulating
CC activity, tissue growth factor activity, immunomodulatory activity and
CC activin/inhibin activity and may be useful in the diagnosis and/or
CC treatment of cancer, leukaemia, nervous system disorders, arthritis and
CC inflammation.

CC Note: The sequence data for this patent did not form part of the printed

CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX Sequence 75 AA;

Query Match 37.0%; Score 50; DB 22; Length 75;
Best Local Similarity 100.0%; Pred. No. 4.5e-42;
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 84 IESWLEPVRLRSMFANNLVYDTSDDYHLKLDLEEGIQTLMGRLDGS 133

Db 1 IESWLEPVRLRSMFANNLVYDTSDDYHLKLDLEEGIQTLMGRLDGS 50

RESULT 11

AAO11018

ID AAO11018 standard; Protein; 120 AA.

XX AAO11018;

XX 06-NOV-2001 (first entry)

XX Human polypeptide SEQ ID NO 24910.

XX Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.

XX Homo sapiens.

XX WO200164835-A2.

XX 07-SEP-2001.

XX 26-FEB-2001; 2001WO-US04927.

XX 28-FEB-2000; 2000US-0515126.

XX 18-MAY-2000; 2000US-0577409.

XX (HYSE-) HYSEQ INC.

XX Tang YT, Liu C, Drmanac RT;

XX WPI: 2001-514838/56.

XX N-PSDB; AAI90949.

XX Isolated nucleic acids and polypeptides, useful for preventing
PT diagnosing and treating e.g. leukaemia, inflammation and immune
PT disorders -

XX Claim 20; SEQ ID NO 24910; 1399pp + Sequence Listing; English.

XX The invention relates to human polynucleotides (AAI79941-AAI93841) and
CC the encoded proteins (AAO00010-AAO13910) that exhibit activity elating to
CC cytokine, cell proliferation or cell differentiation or which may induce
CC production of other cytokines in other cell populations. The
CC polynucleotides and polypeptides are useful in gene therapy, vaccines or
CC peptide therapy. The polypeptides have various cytokine-like activities,
CC e.g. stem cell growth factor activity, haematopoiesis regulating
CC activity, tissue growth factor activity, immunomodulatory activity and
CC activin/inhibin activity and may be useful in the diagnosis and/or
CC treatment of cancer, leukaemia, nervous system disorders, arthritis and
CC inflammation.

CC Note: The sequence data for this patent did not form part of the printed

CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.

XX Sequence 120 AA;

Query Match 34.1%; Score 46; DB 22; Length 120;

Best Local Similarity 100.0%; Pred. No. 6.3e-38;
Matches 46; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 8 SRLFDHAMIQAHRHQAHLAIDTYQEFETYPKDKYSFLHDSQTSF 53
|||||
Db 38 srlfdhamiqahrahqlaidtyqefeetyipkdkysflhdsqtsf 83

RESULT 12
AAO03677
ID AAO03677 standard; Protein; 131 AA.
XX AAO03677;
DT 06-NOV-2001 (first entry)
XX Human polypeptide SEQ ID NO 17569.
DE
XX Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.
XX
OS Homo sapiens.
XX WO200164835-A2.
XX 07-SEP-2001.
XX 26-FEB-2001; 2001WO-US04927.
XX 28-FEB-2000; 2000US-0515126.
XX 18-MAY-2000; 2000US-0577409.
XX (HYSE-) HYSEQ INC.
XX Tang YT, Liu C, Drmanac RT;
XX WPI; 2001-514838/56.
XX N-PSDB; AA183608.
XX Isolated nucleic acids and polypeptides, useful for preventing
PT diagnosing and treating e.g. leukaemia, inflammation and immune
PT disorders -
XX
PS Claim 20; SEQ ID NO 17569; 1399pp + Sequence Listing; English.
XX The invention relates to human polynucleotides (AAI79941-AAI93841) and
CC the encoded proteins (AAO00010-AAO13910) that exhibit activity elating to
CC cytokine, cell proliferation or cell differentiation or which may induce
CC production of other cytokines in other cell populations. The
CC polynucleotides and polypeptides are useful in gene therapy, vaccines or
CC peptide therapy. The polypeptides have various cytokine-like activities,
CC e.g. stem cell growth factor activity, haematopoiesis regulating
CC activity, tissue growth factor activity, immunomodulatory activity and
CC activin/inhibin activity and may be useful in the diagnosis and/or
CC treatment of cancer, leukaemia, nervous system disorders, arthritis and
CC inflammation.
CC Note: The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.
XX
SQ Sequence 131 AA;

Query Match 27.4%; Score 37; DB 22; Length 131;
Best Local Similarity 100.0%; Pred. No. 6e-29;
Matches 37; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 58 SIPTPSNMETQKSNLELRISLLIESWLEPVREL 94
|||||
Db 20 siptpsmeetqkksnlellrisllieswlepvrel 56

RESULT 13
AAO11014
ID AAO11014 standard; Protein; 151 AA.
XX AAO11014;
XX
DT 06-NOV-2001 (first entry)
XX Human polypeptide SEQ ID NO 24906.
DE
XX Human; cytokine; cell proliferation; cell differentiation; gene therapy;
KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;
KW tissue growth factor; immunomodulatory; cancer; leukaemia;
KW nervous system disorders; arthritis; inflammation.
XX
OS Homo sapiens.
XX WO200164835-A2.
XX 07-SEP-2001.
XX 26-FEB-2001; 2001WO-US04927.
XX 28-FEB-2000; 2000US-0515126.
XX 18-MAY-2000; 2000US-0577409.
XX (HYSE-) HYSEQ INC.
XX Tang YT, Liu C, Drmanac RT;
XX WPI; 2001-514838/56.
XX N-PSDB; AA190945.
XX Isolated nucleic acids and polypeptides, useful for preventing
PT diagnosing and treating e.g. leukaemia, inflammation and immune
PT disorders -
XX
PS Claim 20; SEQ ID NO 24906; 1399pp + Sequence Listing; English.
XX The invention relates to human polynucleotides (AAI79941-AAI93841) and
CC the encoded proteins (AAO00010-AAO13910) that exhibit activity elating to
CC cytokine, cell proliferation or cell differentiation or which may induce
CC production of other cytokines in other cell populations. The
CC polynucleotides and polypeptides are useful in gene therapy, vaccines or
CC peptide therapy. The polypeptides have various cytokine-like activities,
CC e.g. stem cell growth factor activity, haematopoiesis regulating
CC activity, tissue growth factor activity, immunomodulatory activity and
CC activin/inhibin activity and may be useful in the diagnosis and/or
CC treatment of cancer, leukaemia, nervous system disorders, arthritis and
CC inflammation.
CC Note: The sequence data for this patent did not form part of the printed
CC specification, but was obtained in electronic format directly from WIPO
CC at ftp.wipo.int/pub/published_pct_sequences.
XX
SQ Sequence 151 AA;

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3	22	16.3	177	1	US-08-187-756C-6	Sequence 6, Appli
4	22	16.3	177	2	US-08-710-324A-6	Sequence 6, Appli
5	22	16.3	191	4	US-08-800-215C-16	Sequence 16, Appl
6	22	16.3	191	4	US-08-800-215C-18	Sequence 18, Appl
7	22	16.3	191	4	US-08-800-215C-20	Sequence 20, Appl
8	22	16.3	191	4	US-09-284-878-5	Sequence 5, Appli
9	22	16.3	191	4	US-09-465-461-1	Sequence 1, Appli
10	22	16.3	192	1	US-08-093-383-1	Sequence 1, Appli
11	22	16.3	194	2	US-08-383-621-4	Sequence 4, Appli
12	22	16.3	194	3	US-08-459-906-4	Sequence 4, Appli
13	22	16.3	198	1	US-08-187-756C-5	Sequence 5, Appli
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21	22	16.3	217	4	US-08-785-271-10	Sequence 10, Appl
22	22	16.3	217	4	US-08-759-628-11	Sequence 11, Appl
23	22	16.3	217	4	US-09-284-878-1	Sequence 1, Appli
24	22	16.3	274	3	US-08-784-582-71	Sequence 71, Appl
25	22	16.3	360	3	US-08-784-582-73	Sequence 73, Appl
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113	6	4.4	197	1	US-08-646-715-24	Sequence 24, Appl	186	6	4.4	1864	2	US-08-804-227C-3	Sequence 3, Appli
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124	6	4.4	407	4	US-08-986-659B-10	Sequence 10, Appl	197	6	4.4	2327	6	5455158-1	Patent No. 5455158
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282	5	3.7	41	6	5177060-8	Patent No. 5177060	355	5	3.7	98	3	US-09-205-680A-3	Sequence 3, Appll
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297	5	3.7	58	1	US-08-470-179-12	Sequence 12, Appl	370	5	3.7	104	2	US-08-727-688-32	Sequence 32, Appl
298	5	3.7	60	4	US-09-227-357-307	Sequence 307, App	371	5	3.7	104	2	US-08-452-427-9	Sequence 9, Appll
299	5	3.7	60	4	US-09-227-357-317	Sequence 317, App	372	5	3.7	104	3	US-09-085-407-9	Sequence 9, Appll
300	5	3.7	64	2	US-08-292-870-1	Sequence 1, Appll	373	5	3.7	107	2	US-08-553-541B-4	Sequence 4, Appll
301	5	3.7	67	3	US-09-065-474-162	Sequence 162, App	374	5	3.7	107	2	US-08-476-176B-4	Sequence 4, Appll
302	5	3.7	71	6	518642-2	Patent No. 518642	375	5	3.7	107	3	US-08-127-721A-4	Sequence 4, Appll
303	5	3.7	72	1	US-08-362-670B-13	Sequence 13, Appl	376	5	3.7	107	3	US-08-485-246A-4	Sequence 4, Appll
304	5	3.7	72	1	US-08-362-670B-15	Sequence 15, Appl	377	5	3.7	107	3	US-09-268-202-4	Sequence 4, Appll
305	5	3.7	72	3	US-08-333-576C-13	Sequence 13, Appl	378	5	3.7	107	4	US-09-268-202-4	Sequence 4, Appll
306	5	3.7	72	3	US-08-333-576C-15	Sequence 15, Appl	379	5	3.7	108	2	US-08-825-782-1	Sequence 1, Appll
307	5	3.7	72	4	US-08-808-324-13	Sequence 13, Appl	380	5	3.7	108	2	US-08-825-782-3	Sequence 3, Appll
308	5	3.7	72	4	US-08-808-324-15	Sequence 15, Appl	381	5	3.7	108	2	US-08-825-782-4	Sequence 4, Appll
309	5	3.7	72	5	PCT-US94-14030A-13	Sequence 13, Appl	382	5	3.7	110	1	US-08-542-363-22	Sequence 22, Appl
310	5	3.7	72	5	PCT-US94-14030A-15	Sequence 15, Appl	383	5	3.7	110	4	US-09-100-089-22	Sequence 22, Appl
311	5	3.7	73	1	US-08-476-008-15	Sequence 15, Appl	384	5	3.7	111	4	US-09-199-637A-413	Sequence 413, App
312	5	3.7	73	1	US-08-306-063-15	Sequence 15, Appl	385	5	3.7	112	2	US-09-193-877-4	Sequence 4, Appll
313	5	3.7	73	1	US-08-833-485-15	Sequence 15, Appl	386	5	3.7	115	4	US-09-097-889-20	Sequence 20, Appl
314	5	3.7	73	1	US-08-137-440-15	Sequence 15, Appl	387	5	3.7	116	2	US-08-392-625-40	Sequence 40, Appl
315	5	3.7	73	4	US-08-936-165A-285	Sequence 285, App	388	5	3.7	116	2	US-08-466-961A-40	Sequence 40, Appl
316	5	3.7	73	5	PCT-US91-06148A-15	Sequence 15, Appl	389	5	3.7	117	1	US-08-314-268-92	Sequence 92, Appl
317	5	3.7	73	6	5177197-53	Patent No. 5177197	390	5	3.7	119	1	US-08-581-529B-7	Sequence 7, Appll
318	5	3.7	74	1	US-08-474-633A-105	Sequence 105, App	391	5	3.7	119	3	US-08-455-559-13	Sequence 13, Appll
319	5	3.7	74	4	US-09-142-565-4	Sequence 4, Appll	392	5	3.7	119	4	US-09-156-316-9	Sequence 9, Appll

393	5	3.7	119	4	US-09-145-060-13	Sequence 13, Appl	466	5	3.7	164	1	US-08-808-303-8	Sequence 8, Appli
394	5	3.7	119	5	PCT-US94-00657-13	Sequence 13, Appl	467	5	3.7	164	1	US-08-808-303-12	Sequence 12, Appl
395	5	3.7	119	5	PCT-US94-07762-7	Sequence 7, Appli	468	5	3.7	164	1	US-08-996-533-8	Sequence 8, Appli
396	5	3.7	120	1	US-08-362-670B-4	Sequence 4, Appli	469	5	3.7	164	1	US-08-996-533-12	Sequence 12, Appl
397	5	3.7	120	2	US-08-637-759B-269	Sequence 269, App	470	5	3.7	165	1	US-08-215-805A-82	Sequence 82, Appl
398	5	3.7	120	3	US-08-871-355A-269	Sequence 269, App	471	5	3.7	166	2	US-08-631-328-55	Sequence 55, Appl
399	5	3.7	120	3	US-08-333-576C-4	Sequence 4, Appli	472	5	3.7	166	4	US-09-339-913B-81	Sequence 81, Appl
400	5	3.7	120	4	US-08-808-324-4	Sequence 4, Appli	473	5	3.7	166	4	US-09-339-913B-86	Sequence 86, Appl
401	5	3.7	120	4	US-08-890-865A-13	Sequence 13, Appl	474	5	3.7	166	4	US-09-339-904A-81	Sequence 81, Appl
402	5	3.7	120	4	US-09-201-945-269	Sequence 269, App	475	5	3.7	166	4	US-09-339-904A-86	Sequence 86, Appl
403	5	3.7	120	5	PCT-US94-14030A-4	Sequence 4, Appli	476	5	3.7	166	4	US-08-769-062B-81	Sequence 81, Appl
404	5	3.7	122	1	US-07-956-700B-37	Sequence 37, Appl	477	5	3.7	166	4	US-08-769-062B-86	Sequence 86, Appl
405	5	3.7	122	1	US-08-476-537-37	Sequence 37, Appl	478	5	3.7	166	4	US-08-936-165A-512	Sequence 512, App
406	5	3.7	122	1	US-08-485-607-37	Sequence 37, Appl	479	5	3.7	166	4	US-09-344-002B-81	Sequence 81, Appl
407	5	3.7	122	2	US-08-598-873-58	Sequence 58, Appl	480	5	3.7	166	4	US-09-344-002B-86	Sequence 86, Appl
408	5	3.7	122	2	US-08-475-879-37	Sequence 37, Appl	481	5	3.7	166	5	PCT-US93-02869-8	Sequence 8, Appli
409	5	3.7	122	4	US-08-605-430-58	Sequence 58, Appl	482	5	3.7	167	2	US-08-993-228-8	Sequence 8, Appli
410	5	3.7	122	4	US-09-199-637A-5	Sequence 5, Appli	483	5	3.7	167	4	US-08-858-207A-353	Sequence 353, App
411	5	3.7	123	2	US-08-588-258B-5	Sequence 1, Appli	484	5	3.7	171	4	US-08-936-165A-307	Sequence 307, App
412	5	3.7	123	3	US-08-460-503-1	Sequence 10, Appl	485	5	3.7	171	4	US-08-943-915-32	Sequence 32, Appl
413	5	3.7	123	4	US-09-156-316-10	Sequence 1, Appli	486	5	3.7	173	2	US-08-943-915-32	Sequence 2, Appli
414	5	3.7	123	5	PCT-US96-08295-1	Sequence 11, Appl	487	5	3.7	174	1	US-08-261-825-2	Sequence 2, Appli
415	5	3.7	129	1	US-08-313-075A-52	Sequence 52, Appl	488	5	3.7	174	2	US-08-719-124-2	Sequence 2, Appli
416	5	3.7	130	1	US-08-246-403A-8	Sequence 8, Appli	489	5	3.7	174	5	PCT-US95-07748A-2	Sequence 2, Appli
417	5	3.7	130	4	US-08-246-403A-11	Sequence 11, Appl	490	5	3.7	177	3	US-09-000-630C-22	Sequence 22, Appl
418	5	3.7	130	4	US-09-205-283-4	Sequence 4, Appli	491	5	3.7	177	3	US-08-862-730C-22	Sequence 22, Appl
419	5	3.7	131	1	US-08-154-916-2	Sequence 2, Appli	492	5	3.7	177	4	US-09-417-455-11	Sequence 11, Appl
420	5	3.7	131	2	US-08-675-508-1	Sequence 1, Appli	493	5	3.7	177	4	US-09-348-942-11	Sequence 11, Appl
421	5	3.7	131	2	US-09-139-424-2	Sequence 2, Appli	494	5	3.7	178	1	US-08-689-916A-2	Sequence 2, Appli
422	5	3.7	131	4	US-08-746-397-2	Sequence 2, Appli	495	5	3.7	179	3	US-08-665-259-1	Sequence 1, Appli
423	5	3.7	131	4	US-09-203-939-5	Sequence 5, Appli	496	5	3.7	179	3	US-08-762-500-1	Sequence 1, Appli
424	5	3.7	131	4	US-09-251-835-5	Sequence 5, Appli	497	5	3.7	181	3	US-08-848-580-12	Sequence 12, Appl
425	5	3.7	131	4	US-09-318-503-5	Sequence 5, Appli	500	5	3.7	181	4	US-09-029-213B-22	Sequence 22, Appl
426	5	3.7	131	4	US-09-038-261A-5	Sequence 5, Appli	499	5	3.7	182	3	US-08-691-563C-90	Sequence 90, Appl
427	5	3.7	132	4	US-09-242-216-2	Sequence 2, Appli	500	5	3.7	183	4	US-08-961-083-178	Sequence 7, Appli
428	5	3.7	133	3	US-08-463-903-4	Sequence 4, Appli	501	5	3.7	184	1	US-08-033-857A-7	Sequence 7, Appli
429	5	3.7	133	4	US-07-935-695-4	Sequence 6, Appli	502	5	3.7	184	1	US-08-374-983A-7	Sequence 7, Appli
430	5	3.7	134	1	US-08-581-529B-6	Sequence 6, Appli	503	5	3.7	189	1	US-08-173-510B-89	Sequence 89, Appl
431	5	3.7	134	2	US-09-097-616-6	Sequence 6, Appli	504	5	3.7	189	1	US-08-026-758-1	Sequence 1, Appli
432	5	3.7	135	3	PCT-US94-07762-6	Sequence 46, Appl	505	5	3.7	189	1	US-08-026-758-14	Sequence 8, Appli
433	5	3.7	135	3	US-08-812-586-46	Sequence 46, Appl	506	5	3.7	189	1	US-08-026-758-15	Sequence 14, Appl
434	5	3.7	137	4	US-09-109-100-19	Sequence 19, Appl	507	5	3.7	189	1	US-08-026-758-18	Sequence 15, Appl
435	5	3.7	140	6	5164490-8	Patent No. 5164490	508	5	3.7	189	1	US-08-458-218-87	Sequence 18, Appl
436	5	3.7	141	2	US-08-483-636-10	Sequence 10, Appl	509	5	3.7	189	1	US-08-458-056A-3	Sequence 87, Appl
437	5	3.7	141	2	US-08-483-636-12	Sequence 12, Appl	510	5	3.7	189	2	US-08-489-072A-3	Sequence 3, Appli
438	5	3.7	141	2	US-08-483-632-10	Sequence 10, Appl	511	5	3.7	189	2	US-08-450-497-89	Sequence 89, Appl
439	5	3.7	141	2	US-08-483-632-12	Sequence 12, Appl	512	5	3.7	189	3	US-08-489-072A-3	Sequence 3, Appli
440	5	3.7	141	2	US-08-690-011A-43	Sequence 43, Appl	513	5	3.7	189	4	US-09-206-935-13	Sequence 13, Appl
441	5	3.7	142	4	US-08-975-080-34	Sequence 34, Appl	514	5	3.7	189	4	US-09-206-935-17	Sequence 17, Appl
442	5	3.7	142	4	US-09-283-144-3	Sequence 3, Appli	515	5	3.7	189	4	US-08-489-071A-3	Sequence 3, Appli
443	5	3.7	147	3	US-08-946-329A-59	Sequence 59, Appl	516	5	3.7	189	4	US-09-206-936-13	Sequence 13, Appl
444	5	3.7	149	4	US-08-975-762-63	Sequence 63, Appl	517	5	3.7	189	4	US-09-206-936-17	Sequence 17, Appl
445	5	3.7	149	4	US-09-295-028-63	Sequence 63, Appl	518	5	3.7	192	4	US-09-303-120B-8	Sequence 8, Appli
446	5	3.7	149	4	US-09-106-582-63	Sequence 63, Appl	519	5	3.7	192	4	US-09-820-576-8	Sequence 8, Appli
447	5	3.7	150	2	US-08-867-676-3	Sequence 3, Appli	520	5	3.7	193	2	US-08-900-407-3	Sequence 3, Appli
448	5	3.7	150	4	US-09-049-672A-3	Sequence 3, Appli	521	5	3.7	194	1	US-08-118-469A-7	Sequence 7, Appli
449	5	3.7	153	4	US-09-228-986-103	Sequence 103, App	522	5	3.7	194	1	US-08-909-119-7	Sequence 7, Appli
450	5	3.7	154	2	US-08-330-394A-29	Sequence 29, Appl	523	5	3.7	194	3	US-08-968-563-35	Sequence 35, Appl
451	5	3.7	154	4	US-09-404-670-4	Sequence 4, Appli	524	5	3.7	194	3	US-08-822-264-4	Sequence 4, Appli
452	5	3.7	154	4	US-09-041-886-32	Sequence 32, Appl	525	5	3.7	194	4	US-08-969-683A-35	Sequence 35, Appl
453	5	3.7	156	2	US-08-330-394A-22	Sequence 22, Appl	526	5	3.7	195	1	US-07-752-101A-68	Sequence 68, Appl
454	5	3.7	156	4	US-09-228-986-87	Sequence 87, Appl	527	5	3.7	195	2	US-08-822-260-3	Sequence 3, Appli
455	5	3.7	158	3	US-08-946-329A-66	Sequence 66, Appl	528	5	3.7	197	1	US-08-186-811-4	Sequence 4, Appli
456	5	3.7	162	1	US-08-048-164A-2	Sequence 2, Appli	529	5	3.7	197	1	US-08-261-660A-2	Sequence 2, Appli
457	5	3.7	162	1	US-08-460-462-2	Sequence 2, Appli	530	5	3.7	197	1	US-08-261-660A-45	Sequence 45, Appl
458	5	3.7	162	1	US-08-460-457-2	Sequence 2, Appli	531	5	3.7	197	1	US-08-261-660A-51	Sequence 51, Appl
459	5	3.7	162	1	US-08-460-458-2	Sequence 2, Appli	532	5	3.7	197	1	US-08-274-303-4	Sequence 4, Appli
460	5	3.7	162	2	US-08-460-455-2	Sequence 2, Appli	533	5	3.7	197	1	US-08-377-391A-4	Sequence 4, Appli
461	5	3.7	162	2	US-08-330-394A-2	Sequence 2, Appli	534	5	3.7	197	2	US-08-215-089-2	Sequence 2, Appli
462	5	3.7	162	4	US-09-366-623-2	Sequence 2, Appli	535	5	3.7	197	2	US-08-779-400-4	Sequence 4, Appli
463	5	3.7	163	2	US-08-867-676-1	Sequence 1, Appli	536	5	3.7	197	4	PCT-US94-06931-2	Sequence 2, Appli
464	5	3.7	163	3	US-09-006-636-7	Sequence 7, Appli	537	5	3.7	197	5	PCT-US94-06931-2	Sequence 2, Appli
465	5	3.7	163	4	US-09-006-632-7	Sequence 7, Appli	538	5	3.7	197	5	PCT-US94-07834-4	Sequence 4, Appli

539	5	3.7	197	5	PCT-US95-03384-2	Sequence 2, Appli	612	5	3.7	253	5	PCT-US96-01314-53	Sequence 53, Appl
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541	5	3.7	198	1	US-08-261-660A-52	Sequence 52, Appl	614	5	3.7	258	4	US-08-336-708A-10	Sequence 10, Appl
542	5	3.7	198	1	US-08-261-660A-53	Sequence 53, Appl	615	5	3.7	260	1	US-09-193-877-3	Sequence 3, Appli
543	5	3.7	198	2	US-08-943-915-33	Sequence 33, Appl	616	5	3.7	260	2	US-09-193-877-6	Sequence 6, Appli
544	5	3.7	199	1	US-08-261-660A-46	Sequence 46, Appl	617	5	3.7	262	2	US-08-038-761A-1	Sequence 1, Appli
545	5	3.7	199	1	US-08-261-660A-48	Sequence 48, Appl	618	5	3.7	262	4	US-08-961-083-30	Sequence 30, Appl
546	5	3.7	199	2	US-08-900-407-4	Sequence 4, Appli	619	5	3.7	262	4	US-09-230-196-6	Sequence 6, Appli
547	5	3.7	200	4	US-08-952-796-15	Sequence 15, Appl	620	5	3.7	263	1	US-08-362-670B-32	Sequence 32, Appl
548	5	3.7	201	3	US-08-369-822C-4	Sequence 4, Appli	621	5	3.7	263	2	US-08-892-690-3	Sequence 3, Appli
549	5	3.7	201	3	US-08-779-764A-20	Sequence 20, Appl	622	5	3.7	263	3	US-08-333-576C-32	Sequence 32, Appl
550	5	3.7	201	3	US-08-779-764A-21	Sequence 21, Appl	623	5	3.7	263	3	US-08-808-324-32	Sequence 32, Appl
551	5	3.7	201	3	US-08-779-764A-22	Sequence 22, Appl	624	5	3.7	263	5	PCT-US94-14030A-32	Sequence 32, Appl
552	5	3.7	201	3	US-08-582-776C-4	Sequence 4, Appli	625	5	3.7	264	1	US-08-448-606-6	Sequence 6, Appli
553	5	3.7	201	3	US-08-434-831B-4	Sequence 4, Appli	626	5	3.7	264	3	US-08-924-570A-2	Sequence 2, Appli
554	5	3.7	202	4	US-09-199-637A-149	Sequence 149, App	627	5	3.7	265	4	US-09-354-129-6	Sequence 6, Appli
555	5	3.7	202	4	US-08-943-915-2	Sequence 2, Appli	628	5	3.7	265	4	US-09-813-817-4	Sequence 4, Appli
556	5	3.7	207	2	US-08-943-915-5	Sequence 5, Appli	629	5	3.7	266	4	US-08-936-165A-305	Sequence 305, App
557	5	3.7	208	1	US-08-109-391A-4	Sequence 4, Appli	630	5	3.7	267	1	US-07-959-946-3	Sequence 3, Appli
558	5	3.7	208	1	US-08-459-019A-4	Sequence 4, Appli	631	5	3.7	267	1	US-08-333-577-3	Sequence 3, Appli
559	5	3.7	208	2	US-08-460-428A-4	Sequence 4, Appli	632	5	3.7	267	4	US-08-454-928-10	Sequence 10, Appl
560	5	3.7	208	3	US-08-458-860A-4	Sequence 4, Appli	633	5	3.7	267	4	US-08-952-796-2	Sequence 2, Appli
561	5	3.7	209	2	US-08-645-193B-30	Sequence 30, Appl	634	5	3.7	267	5	PCT-US92-08634-3	Sequence 3, Appli
562	5	3.7	210	1	US-08-286-872-2	Sequence 2, Appli	635	5	3.7	268	2	US-07-857-224B-74	Sequence 74, Appl
563	5	3.7	210	4	US-09-247-155-121	Sequence 121, App	636	5	3.7	271	2	US-08-790-374-2	Sequence 2, Appli
564	5	3.7	211	4	US-08-936-165A-329	Sequence 329, App	637	5	3.7	273	2	US-09-055-095-3	Sequence 3, Appli
565	5	3.7	214	1	US-08-318-462-4	Sequence 4, Appli	638	5	3.7	273	2	US-08-809-494A-6	Sequence 6, Appli
566	5	3.7	214	1	US-08-707-340-4	Sequence 4, Appli	639	5	3.7	273	4	US-09-352-302-6	Sequence 6, Appli
567	5	3.7	214	2	US-08-916-902A-3	Sequence 3, Appli	640	5	3.7	274	2	US-08-701-191A-33	Sequence 33, Appl
568	5	3.7	214	2	US-08-994-578-4	Sequence 4, Appli	641	5	3.7	274	2	US-07-857-224B-29	Sequence 29, Appl
569	5	3.7	214	2	US-09-213-389-3	Sequence 3, Appli	642	5	3.7	274	3	US-09-141-821-3	Sequence 3, Appli
570	5	3.7	215	1	US-08-312-870-5	Sequence 5, Appli	643	5	3.7	275	1	US-07-611-528A-2	Sequence 2, Appli
571	5	3.7	215	2	US-08-935-396-10	Sequence 10, Appl	644	5	3.7	275	1	US-08-083-946-2	Sequence 2, Appli
572	5	3.7	219	1	US-08-152-485-2	Sequence 2, Appli	645	5	3.7	275	3	US-08-452-915-2	Sequence 2, Appli
573	5	3.7	219	1	US-08-463-089-2	Sequence 2, Appli	646	5	3.7	276	2	US-08-071-935-1	Sequence 1, Appli
574	5	3.7	219	1	US-08-461-360A-2	Sequence 2, Appli	647	5	3.7	276	3	US-09-134-591-1	Sequence 1, Appli
575	5	3.7	219	1	US-08-461-359-2	Sequence 2, Appli	648	5	3.7	277	2	US-08-868-288A-7	Sequence 7, Appli
576	5	3.7	219	5	PCT-US94-12904-2	Sequence 2, Appli	649	5	3.7	277	3	US-09-235-373-7	Sequence 7, Appli
577	5	3.7	222	1	US-08-336-257A-5	Sequence 5, Appli	650	5	3.7	277	3	US-09-388-993-7	Sequence 7, Appli
578	5	3.7	222	5	PCT-US91-09055-3	Sequence 3, Appli	651	5	3.7	278	1	US-08-414-926A-4	Sequence 4, Appli
579	5	3.7	222	6	3386025-2	Patent No. 5386025	652	5	3.7	278	2	US-08-926-922-4	Sequence 4, Appli
580	5	3.7	224	4	US-09-113-750A-7	Sequence 7, Appli	653	5	3.7	278	3	US-09-253-682-4	Sequence 4, Appli
581	5	3.7	225	2	US-08-738-462-2	Sequence 2, Appli	654	5	3.7	278	3	US-09-527-657-4	Sequence 4, Appli
582	5	3.7	225	5	PCT-US94-07587-2	Sequence 2, Appli	655	5	3.7	280	2	US-08-284-941-7	Sequence 7, Appli
583	5	3.7	226	4	US-09-299-378-2	Sequence 2, Appli	656	5	3.7	280	2	US-08-447-642-7	Sequence 7, Appli
584	5	3.7	229	2	US-08-286-819A-45	Sequence 45, Appl	657	5	3.7	280	4	US-09-362-473-8	Sequence 8, Appli
585	5	3.7	229	3	US-08-980-357-45	Sequence 45, Appl	658	5	3.7	280	4	US-09-236-503-7	Sequence 7, Appli
586	5	3.7	229	4	US-09-188-930-315	Sequence 315, App	659	5	3.7	280	5	PCT-US93-02147A-7	Sequence 7, Appli
587	5	3.7	229	5	PCT-US96-03916-13	Sequence 13, Appl	660	5	3.7	281	4	US-08-469-537A-52	Sequence 52, Appl
588	5	3.7	229	1	PCT-US96-03916-62	Sequence 62, Appl	661	5	3.7	281	4	US-09-434-774-6	Sequence 6, Appli
589	5	3.7	231	1	US-08-220-379B-7	Sequence 7, Appli	662	5	3.7	283	3	US-09-141-821-1	Sequence 1, Appli
590	5	3.7	231	2	US-08-243-545-2	Sequence 2, Appli	663	5	3.7	285	3	US-09-141-821-2	Sequence 2, Appli
591	5	3.7	231	2	US-08-993-962-2	Sequence 2, Appli	664	5	3.7	285	3	US-09-141-821-4	Sequence 4, Appli
592	5	3.7	231	3	US-08-986-485-7	Sequence 7, Appli	665	5	3.7	285	5	PCT-US95-04801-7	Sequence 7, Appli
593	5	3.7	231	4	US-08-974-380-2	Sequence 2, Appli	666	5	3.7	288	5	US-08-928-284-2	Sequence 2, Appli
594	5	3.7	231	4	US-09-160-841-2	Sequence 2, Appli	667	5	3.7	292	3	US-08-812-586-3	Sequence 3, Appli
595	5	3.7	231	5	PCT-US94-05365-2	Sequence 2, Appli	668	5	3.7	293	3	US-08-812-586-3	Sequence 3, Appli
596	5	3.7	231	5	PCT-US95-03866-6	Sequence 6, Appli	669	5	3.7	294	2	US-08-701-191A-20	Sequence 20, Appl
597	5	3.7	232	4	US-09-553-498-6	Sequence 6, Appli	670	5	3.7	297	2	US-08-481-956A-10	Sequence 10, Appl
598	5	3.7	233	4	US-09-188-930-139	Sequence 139, App	671	5	3.7	297	2	US-08-629-291A-10	Sequence 10, Appl
599	5	3.7	237	4	US-09-655-270A-19	Sequence 19, Appl	672	5	3.7	297	2	US-08-658-335B-10	Sequence 10, Appl
600	5	3.7	237	4	US-09-651-941-23	Sequence 23, Appl	673	5	3.7	298	2	US-08-061-636-3	Sequence 3, Appli
601	5	3.7	239	3	US-08-813-586-29	Sequence 29, Appl	674	5	3.7	298	3	US-08-874-347-19	Sequence 19, Appl
602	5	3.7	240	2	US-08-114-555A-8	Sequence 8, Appli	675	5	3.7	298	3	US-09-093-522-19	Sequence 19, Appl
603	5	3.7	240	3	US-08-559-397A-14	Sequence 14, Appl	676	5	3.7	298	5	PCT-US94-05288-3	Sequence 3, Appli
604	5	3.7	245	4	US-09-413-814-6	Sequence 6, Appli	677	5	3.7	301	5	PCT-US95-13975-72	Sequence 72, Appl
605	5	3.7	248	4	US-09-387-284-2	Sequence 2, Appli	678	5	3.7	303	4	US-08-961-083-202	Sequence 202, App
606	5	3.7	252	3	US-08-513-974B-52	Sequence 52, Appl	679	5	3.7	304	2	US-08-701-191A-30	Sequence 30, Appl
607	5	3.7	252	3	US-08-513-974B-52	Sequence 360, App	680	5	3.7	306	1	US-08-317-522A-7	Sequence 7, Appli
608	5	3.7	253	2	US-08-468-576B-15	Sequence 15, Appl	681	5	3.7	306	1	US-08-439-818A-7	Sequence 7, Appli
609	5	3.7	253	2	US-08-468-579B-15	Sequence 15, Appl	682	5	3.7	306	2	US-08-751-965-7	Sequence 7, Appli
610	5	3.7	253	3	US-08-468-577B-15	Sequence 15, Appl	683	5	3.7	306	2	US-08-738-975-7	Sequence 7, Appli
611	5	3.7	253	5	PCT-US96-01314-52	Sequence 52, Appl	684	5	3.7	306	2	US-08-728-626-7	Sequence 7, Appli

685	5	3.7	306	3	US-09-120-887-3	Sequence 3, Appl1	758	5	3.7	350	4	US-08-585-895-33	Sequence 33, Appl1
686	5	3.7	306	3	US-08-808-599A-7	Sequence 7, Appl1	759	5	3.7	351	2	US-08-868-288A-6	Sequence 6, Appl1
687	5	3.7	308	2	US-08-468-576B-16	Sequence 16, Appl1	760	5	3.7	351	3	US-09-235-373-6	Sequence 6, Appl1
688	5	3.7	308	2	US-08-468-577B-16	Sequence 16, Appl1	761	5	3.7	351	3	US-09-388-993-6	Sequence 6, Appl1
689	5	3.7	308	3	US-08-468-577B-16	Sequence 16, Appl1	762	5	3.7	351	4	US-09-282-305-4	Sequence 4, Appl1
690	5	3.7	310	2	US-08-469-537A-74	Sequence 74, Appl1	763	5	3.7	353	1	US-07-752-101A-35	Sequence 35, Appl1
691	5	3.7	311	2	US-08-568-459A-21	Sequence 21, Appl1	764	5	3.7	353	1	US-07-752-101A-36	Sequence 36, Appl1
692	5	3.7	311	2	US-08-487-826B-33	Sequence 33, Appl1	765	5	3.7	353	1	US-07-752-101A-38	Sequence 38, Appl1
693	5	3.7	312	4	US-09-188-930-142	Sequence 33, Appl1	766	5	3.7	354	1	US-07-752-101A-39	Sequence 39, Appl1
694	5	3.7	312	4	US-08-460-900C-14	Sequence 142, App	767	5	3.7	354	1	US-07-752-101A-41	Sequence 41, Appl1
695	5	3.7	312	4	US-09-142-565-2	Sequence 2, Appl1	768	5	3.7	354	1	US-07-752-101A-51	Sequence 51, Appl1
696	5	3.7	312	4	US-08-674-509B-14	Sequence 2, Appl1	769	5	3.7	354	4	US-08-915-795-5	Sequence 5, Appl1
697	5	3.7	312	4	US-08-954-698-14	Sequence 14, Appl1	770	5	3.7	355	2	US-08-865-203-5	Sequence 5, Appl1
698	5	3.7	312	4	US-08-356-060A-14	Sequence 14, Appl1	771	5	3.7	355	2	US-07-849-420-5	Sequence 5, Appl1
699	5	3.7	316	4	US-09-413-814-14	Sequence 14, Appl1	772	5	3.7	355	4	US-09-253-854-5	Sequence 5, Appl1
700	5	3.7	319	3	US-09-215-042-1	Sequence 1, Appl1	773	5	3.7	355	4	US-08-955-424-5	Sequence 5, Appl1
701	5	3.7	321	1	US-08-362-670B-26	Sequence 26, Appl1	774	5	3.7	357	4	US-09-718-841-4	Sequence 4, Appl1
702	5	3.7	321	3	US-08-333-576C-26	Sequence 26, Appl1	775	5	3.7	359	2	US-08-713-636-2	Sequence 2, Appl1
703	5	3.7	321	4	US-08-808-324-26	Sequence 26, Appl1	776	5	3.7	360	1	US-08-205-506A-2	Sequence 2, Appl1
704	5	3.7	321	5	PCT-US94-14030A-26	Sequence 26, Appl1	777	5	3.7	360	5	PCT-US94-02389-2	Sequence 2, Appl1
705	5	3.7	323	4	US-09-237-543-6	Sequence 6, Appl1	778	5	3.7	365	2	US-08-827-190-5	Sequence 5, Appl1
706	5	3.7	324	1	US-08-597-236-10	Sequence 10, Appl1	779	5	3.7	365	2	US-08-979-424-3	Sequence 3, Appl1
707	5	3.7	324	1	US-08-746-682A-10	Sequence 10, Appl1	780	5	3.7	365	4	US-08-928-383B-2	Sequence 2, Appl1
708	5	3.7	325	2	US-09-018-576-3	Sequence 3, Appl1	781	5	3.7	365	4	US-08-928-383B-23	Sequence 23, Appl1
709	5	3.7	325	2	US-09-018-576-12	Sequence 12, Appl1	782	5	3.7	365	4	US-08-928-383B-24	Sequence 24, Appl1
710	5	3.7	325	3	US-09-248-137-3	Sequence 3, Appl1	783	5	3.7	365	4	US-08-928-383B-26	Sequence 26, Appl1
711	5	3.7	325	3	US-08-413-137-12	Sequence 12, Appl1	784	5	3.7	365	4	US-09-272-496-2	Sequence 2, Appl1
712	5	3.7	325	4	US-08-915-795-3	Sequence 3, Appl1	785	5	3.7	365	4	US-09-004-838-133	Sequence 133, App
713	5	3.7	326	2	US-08-757-653-172	Sequence 172, App	786	5	3.7	366	2	US-08-984-171-4	Sequence 4, Appl1
714	5	3.7	326	2	US-08-823-516-75	Sequence 75, Appl1	787	5	3.7	366	4	US-09-210-843-2	Sequence 2, Appl1
715	5	3.7	326	2	US-08-823-516-135	Sequence 135, App	788	5	3.7	369	2	US-08-596-291-4	Sequence 4, Appl1
716	5	3.7	326	3	US-08-759-038-111	Sequence 111, App	789	5	3.7	369	3	US-09-100-804-4	Sequence 4, Appl1
717	5	3.7	326	3	US-08-758-314-111	Sequence 111, App	790	5	3.7	369	4	US-09-352-990-6	Sequence 6, Appl1
718	5	3.7	327	1	US-08-463-092B-9	Sequence 9, Appl1	791	5	3.7	369	5	PCT-US94-09943-4	Sequence 4, Appl1
719	5	3.7	327	1	US-08-748-068-2	Sequence 2, Appl1	792	5	3.7	370	3	US-09-150-133-1	Sequence 1, Appl1
720	5	3.7	327	2	US-08-460-907B-9	Sequence 9, Appl1	793	5	3.7	370	3	US-09-150-141-1	Sequence 1, Appl1
721	5	3.7	327	4	US-09-097-767A-2	Sequence 2, Appl1	794	5	3.7	370	4	US-09-374-493-1	Sequence 1, Appl1
722	5	3.7	327	4	US-08-960-780-23	Sequence 23, Appl1	795	5	3.7	370	4	US-09-374-824-1	Sequence 1, Appl1
723	5	3.7	327	4	US-08-960-780-29	Sequence 29, Appl1	796	5	3.7	370	4	US-09-374-492-1	Sequence 1, Appl1
724	5	3.7	327	4	US-09-073-898-23	Sequence 23, Appl1	797	5	3.7	372	4	US-08-987-943-3	Sequence 3, Appl1
725	5	3.7	327	4	US-09-073-898-29	Sequence 29, Appl1	798	5	3.7	374	1	US-08-095-726-14	Sequence 14, Appl1
726	5	3.7	328	3	US-08-812-586-28	Sequence 28, Appl1	799	5	3.7	374	1	US-08-096-623A-14	Sequence 14, Appl1
727	5	3.7	329	4	US-09-334-601-10	Sequence 10, Appl1	800	5	3.7	374	1	US-08-468-847B-12	Sequence 12, Appl1
728	5	3.7	330	2	US-08-838-543-3	Sequence 3, Appl1	801	5	3.7	374	4	US-08-821-994-70	Sequence 70, Appl1
729	5	3.7	330	3	US-08-676-882-2	Sequence 2, Appl1	802	5	3.7	375	1	US-07-752-101A-52	Sequence 52, Appl1
730	5	3.7	331	1	US-08-134-570-12	Sequence 12, Appl1	803	5	3.7	375	2	US-08-459-101A-2	Sequence 2, Appl1
731	5	3.7	331	4	US-08-961-083-212	Sequence 212, App	804	5	3.7	376	2	US-08-737-825-6	Sequence 6, Appl1
732	5	3.7	334	2	US-08-566-096A-6	Sequence 6, Appl1	805	5	3.7	377	1	US-08-188-277B-2	Sequence 2, Appl1
733	5	3.7	334	2	US-08-668-650B-6	Sequence 6, Appl1	806	5	3.7	377	1	US-08-188-277B-4	Sequence 4, Appl1
734	5	3.7	334	4	US-09-200-673-6	Sequence 6, Appl1	807	5	3.7	377	2	US-08-429-964-78	Sequence 78, Appl1
735	5	3.7	334	5	PCT-US93-15646-6	Sequence 6, Appl1	808	5	3.7	377	2	US-08-429-964-80	Sequence 80, Appl1
736	5	3.7	336	3	US-08-749-816-2	Sequence 2, Appl1	809	5	3.7	377	3	US-09-150-133-5	Sequence 5, Appl1
737	5	3.7	336	4	US-09-144-914-2	Sequence 2, Appl1	810	5	3.7	377	3	US-09-150-141-5	Sequence 5, Appl1
738	5	3.7	337	3	US-08-448-722A-2	Sequence 2, Appl1	811	5	3.7	377	4	US-09-374-493-5	Sequence 5, Appl1
739	5	3.7	337	4	US-08-189-309B-2	Sequence 2, Appl1	812	5	3.7	377	4	US-09-374-824-5	Sequence 5, Appl1
740	5	3.7	338	2	US-09-047-026A-2	Sequence 2, Appl1	813	5	3.7	377	4	US-09-374-492-5	Sequence 5, Appl1
741	5	3.7	339	2	US-08-758-621-8	Sequence 8, Appl1	814	5	3.7	378	2	US-08-904-031-4	Sequence 4, Appl1
742	5	3.7	339	4	US-09-107-858-8	Sequence 8, Appl1	815	5	3.7	379	1	US-08-468-847B-11	Sequence 11, Appl1
743	5	3.7	344	4	US-08-961-083-192	Sequence 192, App	816	5	3.7	380	2	US-08-244-205-11	Sequence 11, Appl1
744	5	3.7	345	3	US-09-222-817-2	Sequence 2, Appl1	817	5	3.7	380	4	US-09-097-889-25	Sequence 25, Appl1
745	5	3.7	345	4	US-09-222-886-2	Sequence 2, Appl1	818	5	3.7	380	4	US-09-161-994A-13	Sequence 13, Appl1
746	5	3.7	347	4	US-08-630-915A-32	Sequence 32, Appl1	819	5	3.7	380	5	PCT-US92-10284-11	Sequence 11, Appl1
747	5	3.7	348	2	US-09-031-485-28	Sequence 28, Appl1	820	5	3.7	381	1	US-08-467-125-2	Sequence 2, Appl1
748	5	3.7	348	2	US-08-847-429A-28	Sequence 28, Appl1	821	5	3.7	381	2	US-08-911-320A-2	Sequence 2, Appl1
749	5	3.7	348	2	US-08-933-750C-10	Sequence 10, Appl1	822	5	3.7	381	2	US-09-193-877-2	Sequence 2, Appl1
750	5	3.7	348	3	US-09-065-474-28	Sequence 28, Appl1	823	5	3.7	381	4	US-09-217-101-2	Sequence 2, Appl1
751	5	3.7	348	4	US-09-234-613-10	Sequence 10, Appl1	824	5	3.7	382	1	US-08-318-947A-17	Sequence 17, Appl1
752	5	3.7	349	3	US-08-762-500-77	Sequence 77, Appl1	825	5	3.7	382	2	US-08-795-303-17	Sequence 17, Appl1
753	5	3.7	349	3	US-08-605-150A-17	Sequence 17, Appl1	826	5	3.7	382	4	US-09-277-716-22	Sequence 22, Appl1
754	5	3.7	350	2	US-08-999-811-4	Sequence 4, Appl1	827	5	3.7	383	1	US-08-464-523B-31	Sequence 31, Appl1
755	5	3.7	350	2	US-08-824-996-2	Sequence 2, Appl1	828	5	3.7	383	2	US-08-484-575A-4	Sequence 4, Appl1
756	5	3.7	350	3	US-09-042-105-4	Sequence 4, Appl1	829	5	3.7	383	3	US-08-477-459-4	Sequence 4, Appl1
757	5	3.7	350	4	US-08-510-133A-33	Sequence 33, Appl1	830	5	3.7	383	3	US-08-479-869-4	Sequence 4, Appl1

831	5	3.7	383	4	US-08-486-414-4	Sequence 4, Appl	904	5	3.7	416	4	US-08-349-498-17	Sequence 17, Appl
832	5	3.7	383	4	US-09-434-774-12	Sequence 12, Appl	905	5	3.7	416	5	PCT-US95-15463-17	Sequence 17, Appl
833	5	3.7	383	5	PCT-US94-01826A-4	Sequence 4, Appl	906	5	3.7	416	5	PCT-US95-15923-17	Sequence 17, Appl
834	5	3.7	383	5	PCT-US94-02252A-4	Sequence 4, Appl	907	5	3.7	417	5	US-08-351-981-6	Sequence 6, Appl
835	5	3.7	386	1	US-08-758-213-1	Sequence 1, Appl	908	5	3.7	417	1	US-08-351-981-7	Sequence 7, Appl
836	5	3.7	386	2	US-08-692-787-48	Sequence 48, Appl	909	5	3.7	418	1	US-08-261-206A-72	Sequence 72, Appl
837	5	3.7	386	4	US-09-097-199-48	Sequence 48, Appl	910	5	3.7	418	4	US-08-795-430-13	Sequence 13, Appl
838	5	3.7	386	4	US-09-586-719-10	Sequence 10, Appl	911	5	3.7	419	4	US-08-999-811-2	Sequence 2, Appl
839	5	3.7	387	2	US-08-484-575A-7	Sequence 7, Appl	912	5	3.7	419	3	US-09-042-105-2	Sequence 2, Appl
840	5	3.7	387	3	US-08-477-459-7	Sequence 7, Appl	913	5	3.7	419	3	US-09-042-105-2	Sequence 18, Appl
841	5	3.7	387	3	US-08-479-869-7	Sequence 7, Appl	914	5	3.7	419	3	US-08-795-430-8	Sequence 8, Appl
842	5	3.7	387	4	US-08-486-414-7	Sequence 7, Appl	915	5	3.7	419	4	US-08-795-430-8	Sequence 35, Appl
843	5	3.7	387	5	PCT-US94-01826A-7	Sequence 7, Appl	916	5	3.7	419	5	US-08-510-133A-35	Sequence 2, Appl
844	5	3.7	387	5	PCT-US94-02252A-7	Sequence 7, Appl	917	5	3.7	420	1	PCT-US96-09001-2	Sequence 2, Appl
845	5	3.7	394	1	US-07-637-870-2	Sequence 2, Appl	918	5	3.7	420	1	US-08-391-259-7	Sequence 7, Appl
846	5	3.7	394	1	US-07-637-399-2	Sequence 2, Appl	919	5	3.7	420	1	US-08-391-259-10	Sequence 10, Appl
847	5	3.7	394	1	US-07-640-476-8	Sequence 8, Appl	920	5	3.7	420	1	US-08-391-259-11	Sequence 11, Appl
848	5	3.7	394	1	US-08-112-703-2	Sequence 2, Appl	921	5	3.7	420	2	US-08-839-425-2	Sequence 2, Appl
849	5	3.7	394	3	US-08-705-771-21	Sequence 21, Appl	922	5	3.7	420	2	US-08-839-425-7	Sequence 7, Appl
850	5	3.7	394	4	US-09-364-230-16	Sequence 16, Appl	923	5	3.7	420	2	US-08-839-425-10	Sequence 10, Appl
851	5	3.7	395	3	US-08-781-891-73	Sequence 73, Appl	924	5	3.7	420	2	US-08-839-425-11	Sequence 11, Appl
852	5	3.7	396	4	US-09-046-992-4	Sequence 4, Appl	925	5	3.7	423	1	US-08-844-064-7	Sequence 7, Appl
853	5	3.7	401	2	US-08-549-004A-5	Sequence 5, Appl	926	5	3.7	423	1	US-08-808-641-1	Sequence 1, Appl
854	5	3.7	401	3	US-08-517-802-3	Sequence 3, Appl	927	5	3.7	423	2	US-09-064-839-1	Sequence 1, Appl
855	5	3.7	401	3	US-08-492-459-6	Sequence 6, Appl	928	5	3.7	423	3	US-09-351-438-1	Sequence 1, Appl
856	5	3.7	401	3	US-08-492-459-8	Sequence 8, Appl	929	5	3.7	423	3	US-09-009-433-7	Sequence 7, Appl
857	5	3.7	401	3	US-08-492-459-28	Sequence 28, Appl	930	5	3.7	424	1	US-08-045-269C-2	Sequence 2, Appl
858	5	3.7	401	3	US-08-492-459-29	Sequence 29, Appl	931	5	3.7	424	3	US-08-371-680-2	Sequence 2, Appl
859	5	3.7	401	3	US-08-423-752-6	Sequence 6, Appl	932	5	3.7	424	4	US-09-120-817-2	Sequence 2, Appl
860	5	3.7	401	3	US-08-423-752-8	Sequence 8, Appl	933	5	3.7	424	5	PCT-US94-01198-2	Sequence 2, Appl
861	5	3.7	401	3	US-08-289-222E-3	Sequence 3, Appl	934	5	3.7	426	2	US-08-852-743-2	Sequence 2, Appl
862	5	3.7	401	4	US-08-716-873-6	Sequence 6, Appl	935	5	3.7	426	2	US-09-211-930-4	Sequence 4, Appl
863	5	3.7	401	4	US-08-716-873-20	Sequence 20, Appl	936	5	3.7	426	3	US-09-340-993-4	Sequence 4, Appl
864	5	3.7	401	4	US-08-716-873-22	Sequence 22, Appl	937	5	3.7	426	3	US-09-185-370-2	Sequence 2, Appl
865	5	3.7	401	4	US-08-716-873-42	Sequence 42, Appl	938	5	3.7	426	4	US-09-152-406-4	Sequence 4, Appl
866	5	3.7	401	4	US-08-716-873-43	Sequence 43, Appl	939	5	3.7	426	4	US-09-468-442-4	Sequence 4, Appl
867	5	3.7	401	4	US-09-054-526B-3	Sequence 3, Appl	940	5	3.7	427	2	US-08-846-021A-8	Sequence 8, Appl
868	5	3.7	401	4	US-09-051-982A-5	Sequence 5, Appl	941	5	3.7	429	1	US-08-339-152A-33	Sequence 33, Appl
869	5	3.7	401	4	US-09-368-431-6	Sequence 6, Appl	942	5	3.7	430	4	US-09-256-000-23	Sequence 23, Appl
870	5	3.7	401	4	US-09-368-431-20	Sequence 20, Appl	943	5	3.7	431	4	US-08-821-827C-4	Sequence 4, Appl
871	5	3.7	401	4	US-09-368-431-22	Sequence 22, Appl	944	5	3.7	431	4	US-09-290-202B-4	Sequence 4, Appl
872	5	3.7	401	4	US-09-368-431-42	Sequence 42, Appl	945	5	3.7	432	1	US-08-167-919A-11	Sequence 11, Appl
873	5	3.7	401	4	US-09-368-431-43	Sequence 43, Appl	946	5	3.7	432	2	US-08-677-049-8	Sequence 8, Appl
874	5	3.7	401	4	US-09-414-006-6	Sequence 6, Appl	947	5	3.7	432	3	US-08-715-106-11	Sequence 11, Appl
875	5	3.7	401	4	US-09-414-006-8	Sequence 8, Appl	948	5	3.7	433	4	US-09-457-046B-66	Sequence 66, Appl
876	5	3.7	401	4	US-09-414-006-28	Sequence 28, Appl	949	5	3.7	435	3	US-08-911-321-8	Sequence 8, Appl
877	5	3.7	401	4	US-09-414-006-29	Sequence 29, Appl	950	5	3.7	436	4	US-08-716-873-5	Sequence 5, Appl
878	5	3.7	403	2	US-08-712-709-3	Sequence 3, Appl	951	5	3.7	436	4	US-09-368-431-5	Sequence 5, Appl
879	5	3.7	403	3	US-09-111-444-3	Sequence 3, Appl	952	5	3.7	438	1	US-07-973-324A-2	Sequence 2, Appl
880	5	3.7	403	4	US-09-541-228-3	Sequence 3, Appl	953	5	3.7	438	1	US-08-343-380-2	Sequence 2, Appl
881	5	3.7	404	2	US-08-666-367B-7	Sequence 7, Appl	954	5	3.7	438	4	US-09-072-435-2	Sequence 5, Appl
882	5	3.7	404	4	US-09-143-438-7	Sequence 7, Appl	955	5	3.7	438	4	US-09-167-239-5	Sequence 5, Appl
883	5	3.7	407	1	US-08-117-965-26	Sequence 26, Appl	956	5	3.7	438	4	US-09-072-917A-2	Sequence 2, Appl
884	5	3.7	407	1	PCT-US92-06532-3	Sequence 3, Appl	957	5	3.7	439	4	US-09-282-305-6	Sequence 6, Appl
885	5	3.7	408	4	US-08-821-827C-5	Sequence 5, Appl	958	5	3.7	441	2	US-08-169-948B-10	Sequence 10, Appl
886	5	3.7	408	4	US-09-290-202B-5	Sequence 5, Appl	959	5	3.7	441	2	US-08-448-873-10	Sequence 10, Appl
887	5	3.7	411	1	US-08-463-090B-7	Sequence 7, Appl	960	5	3.7	441	4	US-08-382-452D-10	Sequence 10, Appl
888	5	3.7	411	2	US-08-440-845D-3	Sequence 3, Appl	961	5	3.7	442	2	US-08-693-457-2	Sequence 2, Appl
889	5	3.7	411	2	US-08-440-845D-4	Sequence 4, Appl	962	5	3.7	442	2	US-08-693-457-4	Sequence 4, Appl
890	5	3.7	411	4	US-08-868-458-3	Sequence 3, Appl	963	5	3.7	442	4	US-09-265-731-2	Sequence 2, Appl
891	5	3.7	411	4	US-08-868-458-4	Sequence 4, Appl	964	5	3.7	442	4	US-09-265-731-4	Sequence 4, Appl
892	5	3.7	412	2	US-08-741-134-2	Sequence 2, Appl	965	5	3.7	444	1	US-08-476-008-56	Sequence 56, Appl
893	5	3.7	414	1	US-08-255-471-9	Sequence 9, Appl	966	5	3.7	444	1	US-08-306-063-56	Sequence 56, Appl
894	5	3.7	415	1	US-08-464-523B-27	Sequence 27, Appl	967	5	3.7	444	1	US-08-833-485-56	Sequence 56, Appl
895	5	3.7	415	1	US-08-464-523B-28	Sequence 28, Appl	968	5	3.7	444	4	US-09-243-374-5	Sequence 5, Appl
896	5	3.7	415	4	US-08-795-430-11	Sequence 11, Appl	969	5	3.7	444	4	US-09-137-040-56	Sequence 56, Appl
897	5	3.7	416	3	US-08-946-329A-17	Sequence 17, Appl	970	5	3.7	444	4	US-09-000-062-3	Sequence 3, Appl
898	5	3.7	416	3	US-08-910-505-2	Sequence 2, Appl	971	5	3.7	444	4	US-09-000-062-5	Sequence 5, Appl
899	5	3.7	416	3	US-08-910-505-4	Sequence 4, Appl	972	5	3.7	444	6	5310667-5	Patent No. 5310667
900	5	3.7	416	4	US-08-567-357A-17	Sequence 17, Appl	973	5	3.7	445	2	US-08-630-118A-2	Sequence 2, Appl
901	5	3.7	416	4	US-08-729-743A-17	Sequence 17, Appl	974	5	3.7	445	2	US-08-630-118A-4	Sequence 4, Appl
902	5	3.7	416	4	US-09-493-459-2	Sequence 2, Appl	975	5	3.7	445	2	US-08-630-118A-6	Sequence 6, Appl
903	5	3.7	416	4	US-09-493-459-4	Sequence 4, Appl	976	5	3.7	445	2	US-08-838-399-2	Sequence 2, Appl

QY 114 LKDLREGIOTLMGRLEDGSPR 135
Db 98 LKDLREGIOTLMGRLEDGSPR 119

RESULT 3

US-08-187-756C-6
; Sequence 6, Application US/08187756C
; Patent No. 5597709
; GENERAL INFORMATION:
; APPLICANT: ROSEN, ET AL.
; TITLE OF INVENTION: Human Growth Hormone
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
; STREET: 6 BECKER FARM ROAD
; CITY: ROSELAND
; STATE: NEW JERSEY
; COUNTRY: USA
; ZIP: 07068
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3 5 INCH DISKETTE
; COMPUTER: IBM PS/2
; OPERATING SYSTEM: MS-DOS
; SOFTWARE: WORD PERFECT 5.1
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/187,756C
; FILING DATE: January 27, 1994
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: FERRARO, GREGORY D.
; REGISTRATION NUMBER: 36,134
; REFERENCE/DOCKET NUMBER: 325800-55
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 201-994-1700
; TELEFAX: 201-994-1744
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 177 AMINO ACIDS
; TYPE: AMINO ACID
; STRANDEDNESS:
; TOPOLOGY: LINEAR
; MOLECULE TYPE: PROTEIN
US-08-187-756C-6

Query Match 16.3%; Score 22; DB 1; Length 177;
Best Local Similarity 100.0%; Pred. No. 2.3e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDLREGIOTLMGRLEDGSPR 135
Db 99 LKDLREGIOTLMGRLEDGSPR 120

RESULT 4

US-08-710-324A-6
; Sequence 6, Application US/08710324A
; Patent No. 5962411
; GENERAL INFORMATION:
; APPLICANT: Rosen, et al.
; TITLE OF INVENTION: Human Growth Factor
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Human Genome Sciences, Inc.
; STREET: 9410 Key West Avenue
; CITY: Rockville
; STATE: MD
; COUNTRY: USA

; ZIP: 20850
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/710,324A
; FILING DATE: 16-SEP-1996
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/187,756
; FILING DATE: 27-JAN-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Brookes, A. Anders
; REGISTRATION NUMBER: 36,373
; REFERENCE/DOCKET NUMBER: PF104D1.SKB
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 301-309-8504
; TELEFAX: 301-309-8439
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 177 AMINO ACIDS
; TYPE: AMINO ACID
; STRANDEDNESS:
; TOPOLOGY: LINEAR
; MOLECULE TYPE: PROTEIN
US-08-710-324A-6

Query Match 16.3%; Score 22; DB 2; Length 177;
Best Local Similarity 100.0%; Pred. No. 2.3e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDLREGIOTLMGRLEDGSPR 135
Db 99 LKDLREGIOTLMGRLEDGSPR 120

RESULT 5

US-08-800-215C-16
; Sequence 16, Application US/08800215C
; Patent No. 6238915
; GENERAL INFORMATION:
; APPLICANT: CHIHARA, Kazuo
; TITLE OF INVENTION: MUTANT HUMAN GROWTH HORMONES AND THEIR
; TITLE OF INVENTION: USES
; NUMBER OF SEQUENCES: 22
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: JACOBSON, PRICE, HOLMAN & STERN
; STREET: The Jenifer Building, 400 Seventh St. N.W.
; CITY: Washington
; STATE: DC
; COUNTRY: USA
; ZIP: 20004
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/800,215C
; FILING DATE: 12-FEB-1997
; CLASSIFICATION: 536
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: JP JP/50940/96
; FILING DATE: 18-JUN-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: JP JP/178643/96
; FILING DATE: 18-JUN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Player, William E.
; REGISTRATION NUMBER: 31,409

REFERENCE/DOCKET NUMBER: 10890/P60840US0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-638-6666
TELEFAX: 202-393-5350
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-800-215C-16

Query Match 16.3%; Score 22; DB 4; Length 191;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDL EEGIQTLMGRLEDGSPR 135
|||||
DB 113 LKDL EEGIQTLMGRLEDGSPR 134

RESULT 6

US-08-800-215C-18
Sequence 18, Application US/08800215C
Patent No. 6238915

GENERAL INFORMATION:
APPLICANT: CHIHARA, Kazuo
TITLE OF INVENTION: MUTANT HUMAN GROWTH HORMONES AND THEIR
TITLE OF INVENTION: USES
NUMBER OF SEQUENCES: 22
CORRESPONDENCE ADDRESS:
ADDRESSEE: JACOBSON, PRICE, HOLMAN & STERN
STREET: The Jenifer Building, 400 Seventh St. N.W.
CITY: Washington
STATE: DC
COUNTRY: USA
ZIP: 20004

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patent In Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/800,215C
FILING DATE: 12-FEB-1997
CLASSIFICATION: 536
PRIOR APPLICATION NUMBER: JP JP/50940/96
FILING DATE: 18-JUN-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP JP/178643/96
FILING DATE: 18-JUN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Player, William E.
REGISTRATION NUMBER: 31,409
REFERENCE/DOCKET NUMBER: 10890/P60840US0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-638-6666
TELEFAX: 202-393-5350
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-800-215C-18

Query Match 16.3%; Score 22; DB 4; Length 191;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDL EEGIQTLMGRLEDGSPR 135
|||||
DB 113 LKDL EEGIQTLMGRLEDGSPR 134

RESULT 7

US-08-800-215C-20
Sequence 20, Application US/08800215C
Patent No. 6238915

GENERAL INFORMATION:
APPLICANT: CHIHARA, Kazuo
TITLE OF INVENTION: MUTANT HUMAN GROWTH HORMONES AND THEIR
TITLE OF INVENTION: USES
NUMBER OF SEQUENCES: 22
CORRESPONDENCE ADDRESS:
ADDRESSEE: JACOBSON, PRICE, HOLMAN & STERN
STREET: The Jenifer Building, 400 Seventh St. N.W.
CITY: Washington
STATE: DC
COUNTRY: USA
ZIP: 20004

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patent In Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/800,215C
FILING DATE: 12-FEB-1997
CLASSIFICATION: 536
PRIOR APPLICATION NUMBER: JP JP/50940/96
FILING DATE: 18-JUN-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP JP/178643/96
FILING DATE: 18-JUN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Player, William E.
REGISTRATION NUMBER: 31,409
REFERENCE/DOCKET NUMBER: 10890/P60840US0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-638-6666
TELEFAX: 202-393-5350
INFORMATION FOR SEQ ID NO: 20:
SEQUENCE CHARACTERISTICS:
LENGTH: 191 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-800-215C-20

Query Match 16.3%; Score 22; DB 4; Length 191;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDL EEGIQTLMGRLEDGSPR 135
|||||
DB 113 LKDL EEGIQTLMGRLEDGSPR 134

RESULT 8

US-09-284-878-5
Sequence 5, Application US/09284878
Patent No. 6342375

GENERAL INFORMATION:
APPLICANT: Olazaran, Martha Guerrero
APPLICANT: Salgado, Jose Maria Viader
APPLICANT: Salgado, Jose Maria Viader
TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
FILE REFERENCE: 1829.0010000
CURRENT APPLICATION NUMBER: US/09/284,878

;
;
;
; CURRENT FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; PRIOR FILING DATE: 1997-10-24
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 5
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-5

Query Match 16.3%; Score 22; DB 4; Length 191;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKLDLEEGTQTLGRLDGSPR 135
|||||
Db 113 LKLDLEEGTQTLGRLDGSPR 134

RESULT 9

US-09-465-461-1
; Sequence 1, Application US/09465461
; Patent No. 6348444
; GENERAL INFORMATION:
; APPLICANT: CHAPPEL, Scott
; TITLE OF INVENTION: Human Growth Hormone to stimulate hematopoiesis and immune reconst
; FILE REFERENCE: CHAPPEL-6.1
; CURRENT APPLICATION NUMBER: US/09/465,461
; CURRENT FILING DATE: 1999-12-17
; PRIOR APPLICATION NUMBER: 60/112,668
; PRIOR FILING DATE: 1998-12-17
; NUMBER OF SEQ ID NOS: 1
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 1
; LENGTH: 191
; TYPE: PRT
; ORGANISM: homo sapiens
US-09-465-461-1

Query Match 16.3%; Score 22; DB 4; Length 191;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKLDLEEGTQTLGRLDGSPR 135
|||||
Db 113 LKLDLEEGTQTLGRLDGSPR 134

RESULT 10

US-08-093-383-1
; Sequence 1, Application US/08093383
; Patent No. 5489529
; GENERAL INFORMATION:
; APPLICANT: DeBoer, Herman A.
; APPLICANT: Heyneker, Herbert L.
; APPLICANT: Seeburg, Peter H.
; TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone
; NUMBER OF SEQUENCES: 30
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 460 Point San Bruno Blvd
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS

;
; SOFTWARE: patin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/093,383
; FILING DATE: 14-JUL-1993
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/619827
; FILING DATE: 28-NOV-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/198824
; FILING DATE: 05-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 06/632361
; FILING DATE: 19-JUL-1984
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 06/303687
; FILING DATE: 18-SEP-1981
; ATTORNEY/AGENT INFORMATION:
; NAME: Johnston, Sean A.
; REGISTRATION NUMBER: P35,910
; REFERENCE/DOCKET NUMBER: 46C4
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415/225-3562
; TELEFAX: 415/952-9881
; TELEX: 910/371-7168
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 192 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
US-08-093-383-1

Query Match 16.3%; Score 22; DB 1; Length 192;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKLDLEEGTQTLGRLDGSPR 135
|||||
Db 114 LKLDLEEGTQTLGRLDGSPR 135

RESULT 11

US-08-383-621-4
; Sequence 4, Application US/08383621
; Patent No. 5951972
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.
; TITLE OF INVENTION: Stabilization of Somatotropins And Other
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dr. Estelle J. Tsevdos
; STREET: 1937 West Main Street, P.O. Box 60
; CITY: Stamford
; STATE: Connecticut
; COUNTRY: U.S.A.
; ZIP: 06904-0060
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/383,621
; FILING DATE: 06-FEB-1995
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/766,142
FILING DATE: 25-SEP-1991
ATTORNEY/AGENT INFORMATION:
NAME: Tsevdos, Estelle J.
REGISTRATION NUMBER: 31,145
REFERENCE/DOCKET NUMBER: 31,278-01
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203-321-2756
TELEFAX: 203-321-2971
TELEX: 203-710-474-4059
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 194 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-383-621-4

Query Match 16.3%; Score 22; DB 2; Length 194;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDLREGIQTLMGRLEDGSPR 135
DB 116 LKDLREGIQTLMGRLEDGSPR 137

RESULT 12
US-08-459-906-4
Sequence 4, Application US/08459906
Patent No. 6010999
GENERAL INFORMATION:
APPLICANT: Daley, Michael J.
APPLICANT: Buckwalter, Brian L.
APPLICANT: Cady, Susan M.
APPLICANT: Shieh, Hong-Ming
APPLICANT: Bohlen, Peter
APPLICANT: Seddon, Andrew P.
TITLE OF INVENTION: Stabilization of Somatotropins and Other
TITLE OF INVENTION: Proteins by Modification of Cysteine Residues
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: American Cyanamid Company
STREET: One Cyanamid Plaza
CITY: Wayne
STATE: New Jersey
COUNTRY: U.S.A.
ZIP: 07470-8426
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/459,906
FILING DATE: 02-JUN-1995
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Webster, Darryl L.
REGISTRATION NUMBER: 34,276
REFERENCE/DOCKET NUMBER: 31,278-03
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-3247
TELEFAX: 201-831-3305
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 194 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-459-906-4

Query Match 16.3%; Score 22; DB 3; Length 194;
Best Local Similarity 100.0%; Pred. No. 2.4e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDLREGIQTLMGRLEDGSPR 135
DB 116 LKDLREGIQTLMGRLEDGSPR 137

RESULT 13
US-08-187-756C-5
Sequence 5, Application US/08187756C
Patent No. 5597709
GENERAL INFORMATION:
APPLICANT: ROSEN, ET AL.
TITLE OF INVENTION: Human Growth Hormone
NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
ADDRESSEE: CECCHI, STEWART & OLSTEIN
STREET: 6 BECKER FARM ROAD
CITY: ROSELAND
STATE: NEW JERSEY
COUNTRY: USA
ZIP: 07068
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 INCH DISKETTE
COMPUTER: IBM PS/2
OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PERFECT 5.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/187,756C
FILING DATE: January 27, 1994
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER:
FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: FERRARO, GREGORY D.
REGISTRATION NUMBER: 36,134
REFERENCE/DOCKET NUMBER: 325800-55
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-994-1700
TELEFAX: 201-994-1744
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 198 AMINO ACIDS
TYPE: AMINO ACID
STRANDEDNESS:
TOPOLOGY: LINEAR
MOLECULE TYPE: PROTEIN
US-08-187-756C-5

Query Match 16.3%; Score 22; DB 1; Length 198;
Best Local Similarity 100.0%; Pred. No. 2.5e-14;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDLREGIQTLMGRLEDGSPR 135
DB 120 LKDLREGIQTLMGRLEDGSPR 141

RESULT 14
US-08-710-324A-5
Sequence 5, Application US/08710324A
Patent No. 5962411
GENERAL INFORMATION:
APPLICANT: Rosen, et al.
TITLE OF INVENTION: Human Growth Factor
NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:

ADDRESSEE: Human Genome Sciences, Inc.
 STREET: 9410 Key West Avenue
 CITY: Rockville
 STATE: MD
 COUNTRY: USA
 ZIP: 20850
 COMPUTER READABLE FORM:
 MEDIUM TYPE: Floppy disk
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Patent Release #1.0, Version #1.30
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/710,324A
 FILING DATE: 16-SEP-1996
 CLASSIFICATION: 435
 PRIOR APPLICATION DATA:
 APPLICATION NUMBER: US 08/187,756
 FILING DATE: 27-JAN-1994
 ATTORNEY/AGENT INFORMATION:
 NAME: Brookes, A. Anders
 REGISTRATION NUMBER: 36,373
 REFERENCE/DOCKET NUMBER: PF104D1.SKB
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 301-309-8504
 TELEFAX: 301-309-8439
 INFORMATION FOR SEQ ID NO: 5:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 198 AMINO ACIDS
 TYPE: AMINO ACID
 STRANDEDNESS:
 TOPOLOGY: LINEAR
 MOLECULE TYPE: PROTEIN
 US-08-710-324A-5

Query Match 16.3%; Score 22; DB 2; Length 198;
 Best Local Similarity 100.0%; Pred. No. 2.5e-14; Indels 0; Gaps 0;
 Matches 22; Conservative 0; Mismatches 0;

Qy 114 LKDLKEGIQTLGRLDGSPR 135
 |||||
 Db 120 LKDLKEGIQTLGRLDGSPR 141

RESULT 15

US-08-187-756C-4
 Sequence 4, Application us/08187756C
 Patent No. 5597709
 GENERAL INFORMATION:
 APPLICANT: ROSEN, ET AL.
 TITLE OF INVENTION: Human Growth Hormone
 NUMBER OF SEQUENCES: 7
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
 ADDRESS: CECCHI, STEWART & OLSTEIN
 STREET: 6 BECKER FARM ROAD
 CITY: ROSELAND
 STATE: NEW JERSEY
 COUNTRY: USA
 ZIP: 07068
 COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 INCH DISKETTE
 OPERATING SYSTEM: IBM PS/2
 SOFTWARE: WORD PERFECT 5.1
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/187,756C
 FILING DATE: January 27, 1994
 CLASSIFICATION: 435
 PRIOR APPLICATION DATA:
 APPLICATION NUMBER:
 FILING DATE:
 ATTORNEY/AGENT INFORMATION:

NAME: FERRARO, GREGORY D.
 REGISTRATION NUMBER: 36,134
 REFERENCE/DOCKET NUMBER: 325800-55
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 201-994-1700
 TELEFAX: 201-994-1744
 INFORMATION FOR SEQ ID NO: 4:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 217 AMINO ACIDS
 TYPE: AMINO ACID
 STRANDEDNESS:
 TOPOLOGY: LINEAR
 MOLECULE TYPE: PROTEIN
 US-08-187-756C-4

Query Match 16.3%; Score 22; DB 1; Length 217;
 Best Local Similarity 100.0%; Pred. No. 2.7e-14;
 Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 114 LKDLKEGIQTLGRLDGSPR 135
 |||||
 Db 139 LKDLKEGIQTLGRLDGSPR 160

Search completed: September 25, 2002, 10:05:51
 Job time: 164 sec

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OM protein - protein search, using sw model

Run on: September 25, 2002, 10:03:42 ; Search time 16.13 Seconds
(without alignments)
804.219 Million cell updates/sec

Title: US-09-819-094-18
Perfect score: 135
Sequence: 1 MVQTVPLSRFLDHAMLOAHR.....KDLEEGIQTLMLGRLEDGSPR 135

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 283138 seqs, 96089334 residues

Word size : 0

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 1000 summaries

Database : PIR_71:.*
1: pir1:.*
2: pir2:.*
3: pir3:.*
4: pir4:.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	79	58.5	217	1	LCUUC	chorionamnotropin
2	79	58.5	217	2	E32435	chorionamnotropin
3	52	38.5	215	2	A26449	chorionamnotropin
4	24	17.8	199	2	B32435	chorionamnotropin
5	22	16.3	217	1	STHU	somatotropin 1 pre
6	20	14.8	217	2	I67410	somatotropin - rhe
7	19	14.1	212	2	I67408	chorionic somatoma
8	19	14.1	217	2	I67409	chorionic somatoma
9	19	14.1	217	2	I53267	chorionic somatoma
10	18	13.3	217	2	I67411	somatotropin - rhe
11	17	12.6	217	1	STHUV	somatotropin 2 pre
12	17	12.6	256	1	STHUV2	somatotropin pre
13	11	8.1	217	1	STBO	somatotropin pre
14	11	8.1	217	1	STSH	somatotropin pre
15	11	8.1	217	1	STGT	somatotropin pre
16	11	8.1	217	1	S32682	somatotropin - dom
17	9	6.7	163	2	JN0387	somatotropin - sei
18	9	6.7	190	1	A61584	somatotropin - alp
19	9	6.7	190	2	JK0219	somatotropin - Afr
20	9	6.7	190	2	JS0429	somatotropin - Arc
21	9	6.7	190	2	PN0140	somatotropin - sei
22	9	6.7	216	1	STRT	somatotropin pre
23	9	6.7	216	1	STMS	somatotropin pre
24	9	6.7	216	1	STFG	somatotropin pre
25	9	6.7	216	2	A60509	somatotropin pre
26	9	6.7	216	2	I46145	somatotropin pre
27	9	6.7	216	2	S49483	somatotropin pre
28	9	6.7	216	2	S04929	somatotropin pre
29	9	6.7	216	2	JC1514	somatotropin pre

30	9	6.7	216	2	A37782	somatotropin pre
31	9	6.7	216	2	B49159	somatotropin - gol
32	9	6.7	216	2	JC4632	somatotropin pre
33	8	5.9	87	4	I67761	EST/beta-Gal mutan
34	8	5.9	190	2	S21750	somatotropin - Rus
35	8	5.9	195	2	I51250	somatotropin - bow
36	8	5.9	460	2	F90097	hypothetical prote
37	8	5.9	675	2	D48492	kpsC protein - Esc
38	7	5.2	95	2	C75437	hypothetical prote
39	7	5.2	108	2	F88065	protein T16A1.9 [1
40	7	5.2	109	2	F84010	hypothetical prote
41	7	5.2	160	2	D75461	hypothetical prote
42	7	5.2	170	2	D70158	probable signal pe
43	7	5.2	190	1	STHO	somatotropin - hor
44	7	5.2	191	2	A60625	somatotropin - gre
45	7	5.2	209	2	JT0483	somatotropin 1 pre
46	7	5.2	229	2	H95125	glutamine amidotra
47	7	5.2	229	2	F97996	conserved hypochet
48	7	5.2	275	2	A22826	phytohemagglutinin
49	7	5.2	359	2	AH0593	ABC transporter pe
50	7	5.2	360	2	B86347	hypothetical prote
51	7	5.2	390	2	T49619	hypothetical prote
52	7	5.2	394	2	B39436	flagellin flaB - R
53	7	5.2	396	2	B32808	flagellin chain B
54	7	5.2	403	2	B88470	protein C28H8.11 [
55	7	5.2	463	2	H83036	probable two-compo
56	7	5.2	541	2	E87414	transglycosylase,
57	7	5.2	545	2	T12765	site-specific DNA
58	7	5.2	559	2	D83413	hypothetical prote
59	7	5.2	564	2	T40883	WD repeat protein
60	7	5.2	763	2	A43314	special AT-rich se
61	7	5.2	764	2	A56208	DNA-binding protei
62	7	5.2	809	2	F81312	leucine--tRNA liga
63	7	5.2	937	2	D87483	ribonucleotide red
64	7	5.2	987	2	G86201	hypothetical prote
65	7	5.2	1010	2	C81524	glycyl-tRNA synthe
66	7	5.2	1014	2	H86608	glycyl RNA synthe
67	7	5.2	1014	2	A72016	glycine--tRNA liga
68	6	4.4	15	2	PA0059	protein QF200021 -
69	6	4.4	49	2	I47034	laminin B1 - bovin
70	6	4.4	56	2	PS0424	H11 protein - Toxo
71	6	4.4	58	2	AD2652	hypothetical prote
72	6	4.4	69	2	T17563	hypothetical prote
73	6	4.4	79	2	T42000	hypothetical prote
74	6	4.4	82	2	A72865	AcOrf-120 protein
75	6	4.4	85	2	S04354	somatotropin B - A
76	6	4.4	88	2	G69194	hypothetical prote
77	6	4.4	91	2	E81715	ferredoxin [2Fe-2S
78	6	4.4	91	2	B30233	hypothetical prote
79	6	4.4	92	2	S31025	gene 80 protein -
80	6	4.4	94	2	D70484	glutamyl-tRNA (Gln
81	6	4.4	103	2	E89934	exogenous DNA-bind
82	6	4.4	104	2	B69794	hypothetical prote
83	6	4.4	109	2	C97849	hypothetical prote
84	6	4.4	109	2	E89873	cysteine protieina
85	6	4.4	112	2	C97787	hypothetical prote
86	6	4.4	120	2	F97775	ribosome-binding f
87	6	4.4	123	2	S44555	conserved hypochet
88	6	4.4	124	2	G72222	conserved hypochet
89	6	4.4	130	2	S73368	hypothetical prote
90	6	4.4	131	1	MPBO2	myelin P2 protein
91	6	4.4	132	1	MPH02	myelin P2 protein
92	6	4.4	132	1	MPRB2	myelin P2 protein
93	6	4.4	133	2	T38193	very hypohetical
94	6	4.4	138	2	T50975	hypohetical prote
95	6	4.4	139	2	S04353	somatotropin A - A
96	6	4.4	139	2	T30212	probable transcrip
97	6	4.4	139	2	B89874	hypohetical prote
98	6	4.4	143	2	S63201	probable membrane
99	6	4.4	144	2	S21349	hypohetical 16.3K
100	6	4.4	146	2	JQ0995	hypohetical 16.5K
101	6	4.4	146	2	S11398	PTS fructose-speci
102	6	4.4	150	2	S47459	probable membrane

103	6	4.4	154	2	A49786	bacteriocin immuni	176	6	4.4	226	2	F69753	two-component resp
104	6	4.4	157	2	C81072	hypothetical prote	177	6	4.4	228	2	S76876	hypothetical prote
105	6	4.4	159	2	A83600	phosphopantetheine	178	6	4.4	230	1	B8AGA6	virB8 protein - Ag
106	6	4.4	160	2	T12769	hypothetical yoke	179	6	4.4	230	2	F96636	hypothetical prote
107	6	4.4	161	1	VCTWCP	coat protein - sun	180	6	4.4	231	2	S75380	hypothetical prote
108	6	4.4	162	1	B41659	benzoate 1,2-dioxy	181	6	4.4	233	1	EWKBC	atactin precursor,
109	6	4.4	162	2	D84684	hypothetical prote	182	6	4.4	235	2	D72102	ABC transport ATPa
110	6	4.4	165	2	S15800	hypothetical prote	183	6	4.4	235	2	G86519	ABC transport ATPa
111	6	4.4	166	2	T40988	probable glutaredo	184	6	4.4	236	2	AF2051	two-component syst
112	6	4.4	168	2	T47054	hypothetical prote	185	6	4.4	236	2	E71965	hypothetical prote
113	6	4.4	172	2	F88542	protein ZK637.15 [186	6	4.4	236	2	E71012	hypothetical prote
114	6	4.4	172	2	G97967	transposase (orf1)	187	6	4.4	238	2	H89830	hypothetical prote
115	6	4.4	174	2	A72425	conserved hypothet	188	6	4.4	239	2	AC2745	glycerophosphoryl
116	6	4.4	177	2	B53304	transfer protein B	189	6	4.4	240	1	S76714	hypothetical prote
117	6	4.4	178	2	C40956	interleukin-1 rece	190	6	4.4	240	2	T23440	hypothetical prote
118	6	4.4	178	2	A44610	interleukin-1 rece	191	6	4.4	244	2	JN0487	acetoacetate decar
119	6	4.4	179	2	G87295	hypothetical prote	192	6	4.4	245	2	B71006	hypothetical prote
120	6	4.4	183	2	A60823	somatotropin - blu	193	6	4.4	246	2	B57526	hypothetical prote
121	6	4.4	183	2	T39529	hypothetical prote	194	6	4.4	251	2	G72454	hypothetical prote
122	6	4.4	184	2	T17446	hypothetical 21.1K	195	6	4.4	253	2	C81098	fimbrial biogenesi
123	6	4.4	184	2	AD0232	hypothetical prote	196	6	4.4	253	2	G81843	probable lipoprote
124	6	4.4	184	2	D97995	transposase (orf1)	197	6	4.4	255	2	C95411	probable GntR-fami
125	6	4.4	185	2	D82998	hypothetical prote	198	6	4.4	257	1	B8AG55	virB8 protein prec
126	6	4.4	185	2	F87279	response regulator	199	6	4.4	261	2	A98950	hypothetical prote
127	6	4.4	185	2	AD1183	hypothetical prote	200	6	4.4	261	2	C64948	probable membrane
128	6	4.4	185	2	AE1540	hypothetical prote	201	6	4.4	261	2	E85798	hypothetical prote
129	6	4.4	187	2	AC2363	hypothetical prote	202	6	4.4	264	2	T05594	hypothetical prote
130	6	4.4	189	2	A29793	apolipoprotein III	203	6	4.4	265	2	T14645	hypothetical prote
131	6	4.4	190	2	S70261	outer surface prot	204	6	4.4	268	2	E64613	cell division memb
132	6	4.4	192	2	S34401	hypothetical prote	205	6	4.4	269	2	E97726	DNA-directed DNA p
133	6	4.4	192	2	S12314	hypothetical prote	206	6	4.4	270	2	J50167	nitric-oxide reduc
134	6	4.4	192	2	E82990	hypothetical prote	207	6	4.4	271	2	A64782	probable transcrip
135	6	4.4	196	2	B49453	transcription init	208	6	4.4	271	2	B85550	probable regulator
136	6	4.4	197	2	S26876	hypothetical prote	209	6	4.4	271	2	G90699	repressor of allan
137	6	4.4	198	1	VHXRRR	minor outer capsid	210	6	4.4	272	2	A83672	hypothetical prote
138	6	4.4	198	1	MXRRSE	minor outer capsid	211	6	4.4	274	2	E97202	hypothetical prote
139	6	4.4	198	1	MXRRA	minor outer capsid	212	6	4.4	275	2	AB2466	ABC transporter su
140	6	4.4	198	1	MXRBB	minor outer capsid	213	6	4.4	277	2	B97527	hypothetical prote
141	6	4.4	198	1	MXRBB3	minor outer capsid	214	6	4.4	277	2	AC2746	phosphatidate cytl
142	6	4.4	198	1	MXR69	minor outer capsid	215	6	4.4	277	2	T21630	hypothetical prote
143	6	4.4	198	1	MXR69S	Na+-translocating	216	6	4.4	280	2	C70617	probable transcrip
144	6	4.4	198	2	AC0393	hypothetical prote	217	6	4.4	281	2	B86820	conserved hypothet
145	6	4.4	198	2	S01445	hypothetical prote	218	6	4.4	283	2	T23785	hypothetical prote
146	6	4.4	199	2	C71979	urease accessory p	219	6	4.4	286	2	D84193	hypothetical prote
147	6	4.4	199	2	D64528	urease accessory p	220	6	4.4	287	2	T41579	probable glutamate
148	6	4.4	200	1	MXRBS	minor outer capsid	221	6	4.4	287	2	S76995	hypothetical prote
149	6	4.4	200	2	S40118	minor outer capsid	222	6	4.4	290	2	S76381	probable 3-hydroxy
150	6	4.4	200	2	S40115	NSP5 (NS26,VP11) -	223	6	4.4	290	2	T49631	probable Ni-bindin
151	6	4.4	200	2	S40120	NSP5 (NS26,VP11) -	224	6	4.4	290	2	S46962	exerC protein - Aer
152	6	4.4	201	2	AE2919	3-isopropylmalate	225	6	4.4	292	2	T48327	hypothetical prote
153	6	4.4	201	2	D82896	hypothetical prote	226	6	4.4	293	2	C71703	hypothetical prote
154	6	4.4	204	2	H83929	hypothetical prote	227	6	4.4	296	2	AG2874	hypothetical prote
155	6	4.4	205	2	T46553	recF protein [impo	228	6	4.4	296	2	G90063	hypothetical prote
156	6	4.4	207	2	A86568	holliday junction	229	6	4.4	297	2	A70413	homoserine kinase
157	6	4.4	207	2	H72056	Holliday junction	230	6	4.4	297	2	B89473	protein F52D2.3 [1
158	6	4.4	209	2	I40281	outer surface prot	231	6	4.4	297	2	H97650	ATPase AGR_C.4398
159	6	4.4	210	2	E95198	ABC transporter, A	232	6	4.4	299	2	B95939	probable spermidin
160	6	4.4	210	2	I49294	CD7 antigen - mous	233	6	4.4	303	1	A69815	conserved hypothet
161	6	4.4	211	2	G96984	probable endonucle	234	6	4.4	304	2	I50721	synemin - chicken
162	6	4.4	213	2	H88542	protein ZK637.12 [235	6	4.4	304	2	E97343	hypothetical prote
163	6	4.4	214	2	T14920	hypothetical prote	236	6	4.4	305	2	D84498	hypothetical prote
164	6	4.4	215	2	JC1133	alpha-s1-casein pr	237	6	4.4	306	2	JC1120	sdsB protein - Pse
165	6	4.4	216	2	F97693	3-isopropylmalate	238	6	4.4	310	2	A81298	formate dehydrogen
166	6	4.4	216	2	A98065	hypothetical prote	239	6	4.4	310	2	D70328	histidine kinase s
167	6	4.4	219	2	S03766	virulence protein	240	6	4.4	311	2	T37155	probable oxidoredu
168	6	4.4	219	2	S14242	yopE protein - Yer	241	6	4.4	311	2	T00551	lysophospholipase
169	6	4.4	219	2	T43605	targeted effector	242	6	4.4	311	2	E86436	F28K20.3 protein -
170	6	4.4	219	2	E82825	hypothetical prote	243	6	4.4	312	2	C82298	tRNA pseudouridine
171	6	4.4	221	2	E64305	conserved hypothet	244	6	4.4	315	2	E90435	conserved hypothet
172	6	4.4	221	2	A70543	hypothetical prote	245	6	4.4	315	2	C96666	protein F22C12.4 [
173	6	4.4	225	1	A45270	sensory response r	246	6	4.4	316	2	S35516	type II site-speci
174	6	4.4	225	2	F86417	hypothetical prote	247	6	4.4	317	2	B83390	probable transmem
175	6	4.4	225	2	AH0757	probable cobalt tr	248	6	4.4	320	2	B83238	probable oxidoredu

249	6	4.4	320	2	E71139	hypothetical prote	322	6	4.4	413	2	AF1427	an hypothetical pr
250	6	4.4	322	2	AB2078	iron(III) dicitrat	323	6	4.4	417	2	T49178	hypothetical prote
251	6	4.4	326	2	C71077	hypothetical prote	324	6	4.4	418	2	C95184	IS1167, transposas
252	6	4.4	327	2	AB2194	hypothetical prote	325	6	4.4	421	2	F95096	IS1167, transposas
253	6	4.4	328	2	I64164	hypothetical prote	326	6	4.4	421	2	AI3523	glycerol-3-phospha
254	6	4.4	329	2	H62233	hypothetical prote	327	6	4.4	422	2	S63226	hypothetical prote
255	6	4.4	331	2	A52666	divalent cation tr	328	6	4.4	423	2	B72403	glucose-1-phosphat
256	6	4.4	334	2	T20728	hypothetical prote	329	6	4.4	424	2	S44079	sulfate adenyllytr
257	6	4.4	334	2	G84123	iron (III) dicitra	330	6	4.4	425	1	G69331	conserved hypotet
258	6	4.4	335	2	F86586	oxidoreductase [im	331	6	4.4	428	2	S70670	3-deoxy-D-manno-2-
259	6	4.4	335	2	C72038	conserved hypotet	332	6	4.4	429	2	A56265	uracil transport p
260	6	4.4	335	2	D64384	hydrogenase expres	333	6	4.4	429	2	G91048	uracil transport E
261	6	4.4	339	2	T44993	tRNA-intron endonu	334	6	4.4	429	2	C85893	uracil transport I
262	6	4.4	340	2	T40392	probable 3'-beta-hy	335	6	4.4	429	2	AG0818	uracil permease (u
263	6	4.4	344	2	E71291	flagellar motor sw	336	6	4.4	429	2	AG4511	probable aspartate
264	6	4.4	345	2	A48462	dense granule prot	337	6	4.4	429	2	D95911	probable exported
265	6	4.4	348	2	T08990	hypothetical prote	338	6	4.4	430	2	T46420	hypothetical prote
266	6	4.4	349	2	T20202	hypothetical prote	339	6	4.4	431	1	WZBSDS	adenylosuccinate I
267	6	4.4	352	2	H72722	histidinol-phospha	340	6	4.4	431	2	T14413	S-locus-specific g
268	6	4.4	353	2	H72747	probable RNA 3'-te	341	6	4.4	431	2	T05581	hypothetical prote
269	6	4.4	353	2	T45949	lectin-like protei	342	6	4.4	437	2	T44520	lipopolysaccharide
270	6	4.4	354	2	B97120	DNA uptake protei	343	6	4.4	437	2	T44509	Vi polysaccharide
271	6	4.4	355	2	S06939	hypothetical prote	344	6	4.4	439	2	E89887	transposase for in
272	6	4.4	356	1	J01939	core protein VP7 -	345	6	4.4	440	2	G96600	protein FI4J16.24
273	6	4.4	356	2	H90168	GTP-binding protei	346	6	4.4	440	2	JS0374	hypothetical 51.6K
274	6	4.4	356	2	AG1321	E. coli DNA-damage	347	6	4.4	443	2	D71405	probable protein k
275	6	4.4	359	2	B81718	translation releas	348	6	4.4	444	2	C87297	dihydroorotase [im
276	6	4.4	359	2	J04224	alpha-N-acetylneur	349	6	4.4	444	2	T40307	hypothetical prote
277	6	4.4	359	2	S24225	polysialyltransfer	350	6	4.4	447	2	F96952	glycerol-3-phospha
278	6	4.4	359	2	I59403	alpha-2,8-polysial	351	6	4.4	451	1	F08FGY	retrovirus-related
279	6	4.4	361	2	S07567	translational elonga	352	6	4.4	451	2	S28839	retrovirus-related
280	6	4.4	362	1	DERZNI	NADH dehydrogenase	353	6	4.4	451	2	C83164	hypothetical prote
281	6	4.4	362	2	C97448	hypothetical prote	354	6	4.4	453	1	B70426	periplasmic serine
282	6	4.4	363	2	B75132	cell division cont	355	6	4.4	454	2	G86284	F9L1.4 protein - A
283	6	4.4	363	2	D96900	recF, ABC family A	356	6	4.4	455	2	G96708	hypothetical prote
284	6	4.4	364	2	C90255	hypothetical prote	357	6	4.4	456	2	E83750	gluconate permease
285	6	4.4	366	2	F89936	conserved hypotet	358	6	4.4	463	2	S27491	hypothetical prote
286	6	4.4	367	2	AG0480	aspartate semialde	359	6	4.4	467	1	S45493	serine proteinase
287	6	4.4	368	2	E72408	response regulat	360	6	4.4	467	1	P2WL33	L2 protein - human
288	6	4.4	368	2	T21348	hypothetical prote	361	6	4.4	469	2	T06024	1-aminocyclopropan
289	6	4.4	369	2	T29207	hypothetical prote	362	6	4.4	469	2	T52659	sulfate adenyllytr
290	6	4.4	369	2	D81196	conserved hypotet	363	6	4.4	469	2	C70357	hypothetical prote
291	6	4.4	371	2	A97162	stage V sporulatio	364	6	4.4	470	2	S71174	1-aminocyclopropan
292	6	4.4	372	2	G83707	hypothetical prote	365	6	4.4	470	2	S57902	peptidase V - Lact
293	6	4.4	373	2	D71094	probable cofactor	366	6	4.4	472	1	P2WL58	L2 protein - human
294	6	4.4	374	2	D84632	hypothetical prote	367	6	4.4	472	2	A83331	probable two-compo
295	6	4.4	375	2	C71917	probable transamin	368	6	4.4	475	2	H85156	protein kinase [im
296	6	4.4	375	2	A81086	conserved hypotet	369	6	4.4	476	2	H84524	probable fatty aci
297	6	4.4	375	2	G81857	hypothetical prote	370	6	4.4	477	2	AD3007	hypothetical prote
298	6	4.4	376	2	S52137	Mid2 protein - yea	371	6	4.4	478	2	C70416	trigger factor tig
299	6	4.4	379	2	A70384	glutamate N-acetyl	372	6	4.4	480	2	T34102	hypothetical prote
300	6	4.4	384	1	BVECCX	membrane protein c	373	6	4.4	481	2	E82372	potassium uptake p
301	6	4.4	384	2	B90678	cyanate transport	374	6	4.4	484	2	H84723	probable triacylg
302	6	4.4	384	2	F85528	Na+/H+-exchangin	375	6	4.4	486	2	C75533	probable lipase -
303	6	4.4	388	2	B64459	hypothetical cytos	376	6	4.4	486	2	T38174	probable GCS1/GLO3
304	6	4.4	389	2	AE3254	pyruvate synthase	377	6	4.4	489	2	S51428	hypothetical prote
305	6	4.4	391	2	D59462	probable secreted	378	6	4.4	490	2	AC2458	hypothetical prote
306	6	4.4	392	2	A97308	retrovirus-related	379	6	4.4	491	2	C96585	hypothetical prote
307	6	4.4	393	2	S84733	hypothetical prote	380	6	4.4	492	2	S65238	probable membrane
308	6	4.4	395	2	A95860	hypothetical prote	381	6	4.4	493	2	S76517	hypothetical prote
309	6	4.4	398	2	F84498	hypothetical prote	382	6	4.4	494	2	S58940	alpha-amylase (EC
310	6	4.4	399	2	G82349	conserved hypotet	383	6	4.4	494	2	S58939	alpha-amylase (EC
311	6	4.4	401	2	G87552	conserved hypotet	384	6	4.4	494	2	S58942	alpha-amylase (EC
312	6	4.4	404	2	S45923	probable phosphop	385	6	4.4	494	2	S58941	alpha-amylase (EC
313	6	4.4	404	2	T20055	hypothetical prote	386	6	4.4	494	2	S58943	alpha-amylase (EC
314	6	4.4	405	2	F55596	hypothetical prote	387	6	4.4	494	2	S58946	alpha-amylase (EC
315	6	4.4	407	1	VCBB2G	coat protein precu	388	6	4.4	494	2	S58947	alpha-amylase (EC
316	6	4.4	407	1	VCBBFH	coat protein precu	389	6	4.4	494	2	S58945	alpha-amylase (EC
317	6	4.4	408	2	AB2162	hypothetical prote	390	6	4.4	494	2	S58944	alpha-amylase (EC
318	6	4.4	410	2	A70188	polynucleotide ade	391	6	4.4	494	2	S58938	alpha-amylase (EC
319	6	4.4	411	2	S48647	peptidylprolyl iso	392	6	4.4	494	2	S58937	alpha-amylase (EC
320	6	4.4	412	2	F87460	hypothetical prote	393	6	4.4	499	2	D83333	hypothetical prote
321	6	4.4	413	2	AD1801	hypothetical prote	394	6	4.4	505	1	S24550	protein-tyrosine k

395	6	4.4	509	1	VGNVPC	major envelope gly	468	6	4.4	662	2	T32821	hypothetical prote
396	6	4.4	509	2	T10395	protein gp64 - Org	469	6	4.4	664	1	TNBE70	70.5K alpha trans-
397	6	4.4	509	2	A00649	probable secreted	470	6	4.4	666	2	S01283	hypothetical prote
398	6	4.4	511	2	S58752	NADH dehydrogenase	471	6	4.4	669	2	T01308	probable serine/th
399	6	4.4	512	2	T72866	major budded virus	472	6	4.4	670	2	T37483	hypothetical ptal-
400	6	4.4	513	2	T37180	probable membrane	473	6	4.4	674	2	T40214	hypothetical prote
401	6	4.4	515	2	S56784	hypothetical prote	474	6	4.4	676	1	EDBE22	immediate-early pr
402	6	4.4	522	2	C90073	hypothetical prote	475	6	4.4	676	1	EDBE23	immediate-early pr
403	6	4.4	529	1	VGNVAC	major envelope gly	476	6	4.4	677	2	T75321	ABC transporter, A
404	6	4.4	530	2	H86668	asparagine synthet	477	6	4.4	680	2	T36472	probable secreted
405	6	4.4	530	2	T41865	GP64/67 EFP or f128	478	6	4.4	686	2	T19371	hypothetical prote
406	6	4.4	533	2	T04481	Mlo protein - barl	479	6	4.4	687	2	S58778	probable membrane
407	6	4.4	535	2	G95155	hypothetical prote	480	6	4.4	690	2	H86464	hypothetical prote
408	6	4.4	535	2	B98022	hypothetical prote	481	6	4.4	691	2	E70906	probable beta-gluc
409	6	4.4	536	2	B98277	hypothetical prote	482	6	4.4	691	2	D90592	hypothetical prote
410	6	4.4	536	2	H11563	hypothetical prote	483	6	4.4	692	2	T03377	homeotic protein H
411	6	4.4	538	1	C64181	formate-dependent	484	6	4.4	693	1	TNBEF7	73.8K alpha trans-
412	6	4.4	539	2	T45009	propionyl-CoA carb	485	6	4.4	693	2	JE0260	sulfite reductase
413	6	4.4	541	2	A25516	propionyl-CoA carb	486	6	4.4	695	2	C86731	copper-potassium t
414	6	4.4	541	2	AF0666	probable exported	487	6	4.4	696	2	JC7361	foliitropin recept
415	6	4.4	541	2	I41124	acyl CoA dehydroge	488	6	4.4	706	2	AE2494	hypothetical prote
416	6	4.4	544	2	T05952	Mlo-hl protein - b	489	6	4.4	719	2	S25237	homeotic protein H
417	6	4.4	546	2	I39858	germination respon	490	6	4.4	725	2	C84423	probable ABC trans
418	6	4.4	546	2	C91274	probable acyl coen	491	6	4.4	733	2	T28145	RING3 kinase - chi
419	6	4.4	546	2	C86115	probable acyl coen	492	6	4.4	736	2	T06271	probable ethylene-
420	6	4.4	548	2	G81359	conserved hypothet	493	6	4.4	738	2	A48246	ethylene-response
421	6	4.4	551	2	C64894	hypothetical prote	494	6	4.4	738	2	T01897	ethylene-response
422	6	4.4	551	2	E90882	probable glycoprot	495	6	4.4	740	2	T51619	probable ethylene
423	6	4.4	551	2	B85736	probable glycoprot	496	6	4.4	741	2	T16992	ethylene receptor
424	6	4.4	564	2	C42523	A55R protein - vac	497	6	4.4	743	2	T32421	hypothetical prote
425	6	4.4	564	2	J01792	Salp17R protein - c	498	6	4.4	754	2	S71783	ETRI protein homol
426	6	4.4	565	2	S75255	tyrs protein slr10	499	6	4.4	754	2	T52288	ethylene receptor
427	6	4.4	566	2	A75481	sensor histidine k	500	6	4.4	754	2	A56619	female sterile hom
428	6	4.4	568	2	T06489	probable peptidylp	501	6	4.4	756	2	G86150	F22M8.3 protein -
429	6	4.4	569	2	T52056	vacuolar protein-s	502	6	4.4	763	2	AE2443	penicillin-binding
430	6	4.4	569	2	T00445	membrane associate	503	6	4.4	768	2	T38188	probable DNA repa
431	6	4.4	571	2	H97070	hypothetical prote	504	6	4.4	771	2	B70564	hypothetical prote
432	6	4.4	572	2	T29880	hypothetical prote	505	6	4.4	774	2	T31512	hypothetical prote
433	6	4.4	586	2	AI2065	hypothetical prote	506	6	4.4	776	2	C69072	anaerobic ribonucl
434	6	4.4	588	2	A00136	succinate dehydrog	507	6	4.4	777	2	I48100	ADAM 5 protein pre
435	6	4.4	589	2	E88492	protein T07E3.1 li	508	6	4.4	778	2	A64656	hypothetical prote
436	6	4.4	593	2	S51946	pyruvate kinase (E	509	6	4.4	778	2	C71944	hypothetical prote
437	6	4.4	596	2	T23193	hypothetical prote	510	6	4.4	780	2	S62418	hypothetical prote
438	6	4.4	598	2	T05329	hypothetical prote	511	6	4.4	780	2	I47038	receptor protein k
439	6	4.4	601	2	A82110	ATP-binding protei	512	6	4.4	783	2	T45899	receptor protein k
440	6	4.4	602	1	A35385	hydrogen dehydroge	513	6	4.4	784	2	T51759	[glutamate--ammoni
441	6	4.4	603	2	G87669	acyl-CoA dehydroge	514	6	4.4	784	2	A24050	ribonucleoside-dip
442	6	4.4	604	2	E75119	hypothetical prote	515	6	4.4	792	2	S16680	probable cation-tr
443	6	4.4	607	2	T33184	hypothetical prote	516	6	4.4	792	2	C71250	probable potassium
444	6	4.4	608	2	A64992	sensor protein Ato	517	6	4.4	792	2	T00487	glucocorticoid rec
445	6	4.4	609	2	A41081	alpha-1-inhibitor	518	6	4.4	795	1	QRRTG	hypothetical prote
446	6	4.4	611	2	S38162	translation elonga	519	6	4.4	796	2	S46593	hypothetical prote
447	6	4.4	613	2	T00758	ethylene response	520	6	4.4	798	2	T34248	pmt2 methyltransf
448	6	4.4	613	2	T14432	probable ethylene	521	6	4.4	802	2	T37754	ribonucleoside-dip
449	6	4.4	618	2	G75113	NADH dehydrogenase	522	6	4.4	804	2	B48687	leucine--tRNA liga
450	6	4.4	620	2	AE3222	hypothetical prote	523	6	4.4	806	2	G71805	leucine--tRNA liga
451	6	4.4	624	2	JC5471	regulatory protein	524	6	4.4	806	2	C64713	helicase homolog C
452	6	4.4	625	2	S18420	regulatory protein	525	6	4.4	811	2	T30968	probable nitrate r
453	6	4.4	625	2	H84863	hypothetical prote	526	6	4.4	828	2	D64990	probable nitrate r
454	6	4.4	630	1	BWPSAP	gida protein - pse	527	6	4.4	828	2	G91015	probable nitrate r
455	6	4.4	630	2	D82950	glucose-inhibited	528	6	4.4	828	2	A85860	probable nitrate r
456	6	4.4	630	2	T07966	probable ethylene	529	6	4.4	828	2	A10788	hypothetical prote
457	6	4.4	631	2	T08051	probable ethylene	530	6	4.4	835	2	T30030	hypothetical prote
458	6	4.4	635	2	T06537	ethylene receptor	531	6	4.4	837	2	C69200	surface proteinase
459	6	4.4	635	2	A54592	110k actin filamen	532	6	4.4	840	1	URJB	urease (EC 3.5.1.5
460	6	4.4	637	2	T08050	probable ethylene	533	6	4.4	843	2	T41237	conserved hypothet
461	6	4.4	638	2	S41159	sodium transport p	534	6	4.4	844	1	RRXSSP	RNA-directed RNA p
462	6	4.4	640	2	I51915	epithelial sodium	535	6	4.4	844	2	S05988	translation elonga
463	6	4.4	647	2	G71490	hypothetical prote	536	6	4.4	845	1	RRXSTA	RNA-directed RNA p
464	6	4.4	650	2	T24739	hypothetical prote	537	6	4.4	847	2	A49412	ribonucleoside-dip
465	6	4.4	654	2	G83213	hypothetical prote	538	6	4.4	849	2	A96592	hypothetical prote
466	6	4.4	656	2	B82056	glutathione-regula	539	6	4.4	851	2	AE3567	ATP-dependent heli
467	6	4.4	662	2	S51971	probable membrane	540	6	4.4	852	2	T21362	hypothetical prote

541 translation elonga 852 2 A40411
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 544 protein-tyrosine k 856 2 I58411
 545 probable alpha-man 856 2 G71133
 546 prominin - rat 857 2 JC7716
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 559 NADH dehydrogenase 896 2 E84948
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 563 probable RNA-direc 956 1 RRBWSC
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 575 leucine-tRNA liga 994 1 SYNCIM
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 587 pyruvate-flavored 1079 2 F82447
 588 transcription acti 1081 2 S66736
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 593 hypothetical prote 1139 2 T33368
 594 hypothetical prote 1141 2 E89824
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 601 hypothetical prote 1209 2 T16663
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 604 hypothetical prote 1221 2 T25005
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 606 kinesin-like prote 1226 2 I51617
 607 p-glycoprotein-lik 1229 2 D85023
 608 multidrug resistan 1229 2 T52319
 609 conserved hypothet 1232 2 T06165
 610 inositol polyphosp 1245 2 H83574
 611 WD-repeat protein 1258 2 JC5765
 612 hypothetical prote 1258 2 A12155
 613 hypothetical prote 1260 2 T26747
 614 hypothetical prote 1271 2 D64237

614 translation elonga 1276 2 C88589
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 621 translation elonga 1338 2 S09982
 622 translation elonga 1338 2 T30565
 623 mismatch repair pr 1360 2 T12064
 624 chitinase (EC 3.2. 1396 2 A44453
 625 chitinase (EC 3.2. 1398 2 T28159
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 644 zinc proteinase (E 1736 2 T00391
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 646 DNA-binding protei 1784 2 C96615
 647 leucine-tRNA liga 1786 1 MMHUB1
 648 hypothetical prote 1812 2 I49350
 649 probable oxoglutar 1864 1 JQ1657
 650 oxoglutarate dehyd 1884 1 A45535
 651 Rab6 GTPase activa 1885 2 JQ2183
 652 cation efflux syst 1891 2 T13594
 653 N-acetylglucosamin 1920 2 T13893
 654 hypothetical prote 1955 2 T30934
 655 dyactin - chicken 2052 2 T18290
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 659 pyruvate-flavored 2212 2 T28157
 660 transcription acti 2265 1 FNBO
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 662 hypothetical prote 2291 2 S11238
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 667 LIM domain protein 2578 2 A56922
 668 fibrinogen-binding 2647 2 T28161
 669 RNA-directed RNA p 2697 2 T25444
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 673 hypothetical prote 3027 2 JQ1917
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 676 hypothetical prote 368 2 S69625
 677 hypothetical prote 368 2 G02334
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 681 conserved hypothet 15281 2 S41309
 682 inositol polyphosp 10 2 S38305
 683 WD-repeat protein 16 2 A36889
 684 hypothetical prote 17 2 A60743
 685 hypothetical prote 18 2 PQ0072
 686 hypothetical prote 20 2 B37520

protein Y39ALB.3 l
 DNA-directed RNA p
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 densin-180 - rat
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 homeotic protein H
 R5SA-H3 antigen pr
 hypothetical prote
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 hypothetical prote
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 glutathione trans

687 22 2 C60691
 688 22 2 S05236
 689 23 2 S34739
 690 27 2 A43768
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 721 59 2 T22272
 722 59 2 F72102
 723 60 2 G86679
 724 60 2 AD2522
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 726 62 2 B82214
 727 62 2 G82476
 728 62 2 E64510
 729 63 2 A39948
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 742 68 2 S78739
 743 68 2 T07208
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 753 70 2 G95286
 754 70 2 AB2924
 755 71 2 T01543
 756 71 2 T07190
 757 71 2 T28271
 758 72 2 I40354
 759 73 2 T38402

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 830 5 3.7
 831 5 3.7
 832 5 3.7

hypothetical prote
 brevinn-2ef precu
 cold shock protein
 hypothetical prote
 carbon storage reg
 hypothetical prote
 conserved hypotet
 NADH dehydrogenase
 C7L protein - vari
 hypothetical prote
 hypothetical 8.8K
 ip6 protein - phag
 pseudogene (rs1655
 mobilization prote
 hypothetical prote
 acyl carrier prote
 hypothetical prote
 prophage pil prote
 hypothetical prote
 MHC alpha chain -
 hypothetical prote
 hypothetical prote
 cytochrome c6 - go
 hypothetical prote
 hypothetical prote
 gamma 4-crystallin
 hypothetical prote
 hypothetical prote
 hypothetical prote
 hypothetical prote
 enteroinvasiveness
 spa9 protein - Shi
 conserved hypotet
 gibberellin-regula
 conserved hypotet
 hypothetical prote
 cop protein - lact
 hypothetical prote
 alanine dehydrogen
 ubiquinol--cytochr
 flagellar biosynth
 retrovirus-related
 A-ORF-P protein -
 SalPa protein - va
 hypothetical prote
 hypothetical prote
 ABC-type transport
 hypothetical prote
 Ip9 protein - phag
 hypothetical prote
 ferredoxin [2Fe-2S
 T-cell receptor al
 hypothetical prote
 hypothetical prote
 hypothetical prote
 hypothetical prote
 protein (imported
 hypothetical phage
 glycoprotein J - h
 ribosomal protein
 L-phenylalanine ox
 BOLA/Vrba family p
 conserved hypotet
 hypothetical prote
 ribosomal protein
 alpha-fibrinogen -
 hypothetical prote
 hypothetical prote
 hypothetical prote
 unknown protein en
 probable transcrip

833 5 3.7 93 2 A01247 hypothetical prote
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882 5 3.7 104 1 G43258 phosphotransferase
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977 5 3.7 117 2 S38601 ribosomal protein
978 5 3.7 117 2 S52612 probable membrane

probable allophyc
hypothetical prote
similar to gibbere
gene AFX1 protein
probable regulator
cofactor A - mouse
transcription regu
50S ribosomal prot
gene 4.2 protein -
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
insulin precursor
ribosomal protein
hypothetical prote
PTS system, cellob
T-cell receptor al
hypothetical prote
hypothetical prote
hypothetical prote
T cell receptor Er
hypothetical prote
conserved hypotet
hypothetical prote
hypothetical prote
ribosomal protein
ribosomal protein
hypothetical 12.8K
conserved hypotet
conserved hypotet
hypothetical prote
probable membrane
hypothetical prote
PTS beta-glucoside
PTS beta-glucoside
hypothetical prote
phytochrome - Meso
hypothetical prote
head formation pro
hypothetical prote
hypothetical prote
homolog to yeast g
hypothetical prote
hypothetical prote
gdp-fucose synthet
NADH dehydrogenase
natriuretic peptid
NADH dehydrogenase
NADH dehydrogenase
T-cell receptor de
LCR negative regul
virC-region hypoth
LCR negative regul
hypothetical prote
hypothetical prote
probable erpK prot
Ig lambda chain pr
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
Zn finger protein,
ribosomal protein
probable membrane

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hypothetical prote
 hypothetical prote
 NADH dehydrogenase
 NADH dehydrogenase
 transcription fact
 probable lipoprote
 hypothetical prote
 probable terminase
 unknown protein en
 HesB/YadR/Yfhr fam
 hypothetical prote
 phosphoribosyl-AMP
 multidrug-efflux t
 hypothetical prote
 hypothetical prote
 probable integral
 probable membrane
 conserved hypothet
 hypothetical l3k p
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 hypothetical l3.7k
 probable phosphoes

ALIGNMENTS

RESULT 1

LCHUC

chorionammatropin A precursor [validated] - human
 C;Alternate names: chorionic somatommatropin I; placental lactogen
 C;Species: Homo sapiens (man)
 C;Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 08-Dec-2000
 C;Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229; I59
 R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg, P.
 Genomics 4, 479-497, 1999
 A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
 A;Reference number: A32435; MUID:89307277
 A;Accession: C32435
 A;Molecule type: DNA
 A;Residues: 1-217 <CHE>
 A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52551.1; PID:g183151
 R;Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallowell, R.A.; Page, G.S.; Smith, S.; Tisch
 in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Joseph,
 A;Reference number: A94422
 A;Accession: A94422
 A;Molecule type: mRNA
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 R;Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashima,
 Biochem. Int. 16, 287-292, 1988
 A;Title: cDNA cloning of human chorionic somatommatropin-1 mRNA whose transcription wa
 A;Reference number: I52342; MUID:88209096
 A;Accession: I52342
 A;Status: translated from GB/EMBL/DDBJ
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 A;Cross-references: GB:M35419; NID:g506822
 R;Sherwood, L.M.; Bursstein, Y.; Schechter, I.
 Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979
 A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human pl
 A;Reference number: A93833; MUID:80034970
 A;Accession: A93833
 A;Molecule type: protein
 A;Residues: 1,3-26 <SHE>
 A;Experimental source: placenta
 R;Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.
 Nature 270, 494-499, 1977
 A;Title: Construction and analysis of recombinant DNA for human chorionic somatommatro
 A;Reference number: A93192; MUID:78071761
 A;Accession: A93192
 A;Molecule type: DNA
 A;Residues: 50-217 <SHI>
 A;Experimental source: placenta

R;Li, C.H.; Dixon, J.S.; Chung, D.
 Arch. Biochem. Biophys. 155, 95-110, 1973
 A;Title: Amino acid sequence of human chorionic somatommatropin.
 A;Reference number: A90054; MUID:73201971
 A;Accession: A90054
 A;Molecule type: protein
 A;Residues: 27-217 <LIC>
 A;Experimental source: placenta
 R;Niall, H.D.
 in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths,
 A;Title: The chemistry of the human lactogenic hormones.
 A;Reference number: A94427
 A;Accession: A94427
 A;Molecule type: protein
 A;Residues: 27-217 <NIA>
 A;Experimental source: placenta
 R;Nic A Baird, N.; Tipton, K.F.
 Biochem. Soc. Trans. 19, 20S, 1991
 A;Title: Catechol-O-methyltransferase from human placenta: purification and some prop
 A;Reference number: A61283; MUID:91244006
 A;Accession: A61283
 A;Molecule type: protein
 A;Residues: 27-46 <NIC>
 A;Note: chorionammatropin apparently copurified with placental catechol-O-methyltrans
 R;Sherwood, L.M.; Handwerker, S.; McLaurin, W.D.; Lanner, M.
 Nature New Biol. 233, 59-61, 1971
 A;Title: Amino-acid sequence of human placental lactogen.
 A;Reference number: A93401; MUID:72016313
 A;Contents: annotation
 R;Sherwood, L.M.; Handwerker, S.; McLaurin, W.D.; Lanner, M.
 Nature New Biol. 235, 64, 1972
 A;Reference number: A93405
 A;Contents: annotation
 R;Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.
 J. Biol. Chem. 254, 3782-3787, 1979
 A;Title: Identification of the interchain disulfide bonds of dimeric human placental
 A;Reference number: A92251; MUID:79173081
 A;Contents: annotation: dimeric disulfide bonds
 R;Seiby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.
 J. Biol. Chem. 259, 13131-13138, 1984
 A;Title: Analysis of a major human chorionic somatommatropin gene. Evidence for two
 A;Reference number: I55229; MUID:85030426
 A;Accession: I55229
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 R;Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.
 Trans. Assoc. Am. Physicians 90, 109-116, 1977
 A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
 A;Reference number: I59658; MUID:78160787
 A;Accession: I59658
 A;Status: translated from GB/EMBL/DDBJ
 A;Molecule type: mRNA
 A;Residues: 160-217 <RE2>
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 A;Cross-references: GDB:119084; OMTM:150200
 A;Map position: 17q22-17q24
 A;Introns: 4/1; 57/3; 97/3; 152/3
 C;Superfamily: prolactin
 C;Keywords: hormone; placenta
 F:1-26/Domain: signal sequence #status experimental <SIG>
 F:27-217/Product: chorionammatropin A #status experimental <MAT>
 F:79-191/Disulfide bonds: #status experimental
 F:208-215/Disulfide bonds: (in monomeric form) #status experimental
 F:208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
 F:215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

Query Match 58.5%; Score 79; DB 1; Length 217;
 Best Local Similarity 100.0%; Pred. No. 1.9e-71;

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Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 55 FDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHL 114
Db 80 FDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHL 139

QY 115 LKLEEGIQTLGRLDGS 133
Db 140 LKLEEGIQTLGRLDGS 158

RESULT 2
E32435
Chorionamototropin B precursor - human
N:Alternate names: chorionic somatomotropin 2
C:Species: Homo sapiens (man)
C:Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
C:Accession: E32435
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: E32435
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g183153
C:Gene: GDB:CSH2
A:Cross-references: GDB:119813; OMIM:118820
A:Map position: 17q22-17q24
C:Superfamily: prolactin

Query Match 58.5%; Score 79; DB 2; Length 217;
Best Local Similarity 100.0%; Pred. No. 1.9e-71;
Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 55 FDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHL 114
Db 80 FDSIPTPSNMEETQKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHL 139

QY 115 LKLEEGIQTLGRLDGS 133
Db 140 LKLEEGIQTLGRLDGS 158

RESULT 3
A26449
Chorionamototropin precursor (allele hCS-3) - human
C:Species: Homo sapiens (man)
C:Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 28-Jul-1995
C:Accession: A26449
R:Hirt, H.; Kimmelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.; Ba
DNA 6, 59-70, 1987
A:Title: The human growth hormone gene locus: structure, evolution, and allelic variati
A:Reference number: A26449; MUID:87161235
A:Accession: A26449
A:Molecule type: DNA
A:Residues: 1-215 <HIR>
C:Superfamily: prolactin
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-215/Product: chorionamototropin, hCS-3 allele #status predicted <MAT>

Query Match 38.5%; Score 52; DB 2; Length 215;
Best Local Similarity 100.0%; Pred. No. 2.2e-44;
Matches 52; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 2 VQTPLSLRDLHMLQAHRAHQAIDTYQEFETYIPKDKYSFLHDSQTSF 53
Db 27 VQTPLSLRDLHMLQAHRAHQAIDTYQEFETYIPKDKYSFLHDSQTSF 78
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RESULT 4
B32435
Chorionamototropin-like protein precursor - human
C:Species: Homo sapiens (man)
C:Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
C:Accession: B32435
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg,
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: B32435
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-199 <CHE>
A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52550.1; PID:g183150
C:Superfamily: prolactin

Query Match 17.8%; Score 24; DB 2; Length 199;
Best Local Similarity 100.0%; Pred. No. 2.4e-16;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 100 NNLYVDTSDSDYHLKDLKEEGIQ 123
Db 107 NNLYVDTSDSDYHLKDLKEEGIQ 130

RESULT 5
STHU
somatotropin 1 precursor [validated] - human
N:Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
C:Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, sho
C:Species: Homo sapiens (man)
C:Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 08-Dec-2000
C:Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217;
R:DeNoto, F.M.; Moore, D.D.; Goodman, H.M.
Nucleic Acids Res. 9, 3719-3730, 1981
A:Title: Human growth hormone DNA sequence and mRNA structure: possible alternative s
A:Reference number: A93731; MUID:82014939
A:Accession: A93731
A:Molecule type: DNA
A:Residues: 1-217 <DEN>
A:Cross-references: GB:V00520
A:Note: the 20K short form somatotropin lacks residues 58-72 (32-46 in the active hor
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg,
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: A32435
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52549.1; PID:g183149
R:Roskam, W.; Rougeon, F.
Nucleic Acids Res. 7, 305-320, 1979
A:Title: Molecular cloning and nucleotide sequence of the human growth hormone struct
A:Reference number: A93694; MUID:80034477
A:Accession: A93694
A:Molecule type: mRNA
A:Residues: 1-217 <ROS>
A:Cross-references: GB:V00519
A:Note: 35-Pro was also found
R:Martial, J.A.; Hallewell, R.A.; Baxter, J.D.; Goodman, H.M.
Science 205, 602-607, 1979
A:Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
A:Reference number: A94247; MUID:79203293
A:Accession: A94247
A:Molecule type: mRNA
A:Residues: 1-217 <MAR>
R:Li, C.H.; Dixon, J.S.; Liu, W.K.
Arch. Biochem. Biophys. 133, 70-91, 1969
A:Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
A:Reference number: A90048; MUID:69289202
```

A:Contents: annotation
 R:Li, C.H.; Dixon, J.S.
 Arch. Biochem. Biophys. 146, 233-236, 1971
 A:Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: re
 A:Reference number: A90051; MUID:72143935
 A:Accession: A90051
 A:Molecule type: protein
 A:Residues: 27-94;96-217 <LIC>
 R:Niall, H.D.
 Nature New Biol. 230, 90-91, 1971
 A:Title: Revised primary structure for human growth hormone.
 A:Reference number: A93397; MUID:71139765
 A:Accession: A93397
 A:Molecule type: protein
 A:Residues: 27-51 <NTA>
 R:Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
 Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
 A:Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution
 A:Reference number: A93778; MUID:71153968
 A:Accession: A93778
 A:Molecule type: protein
 A:Residues: 119-120;157-159 <NI2>
 R:Niall, H.D.
 In Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K.,
 A:Title: The chemistry of the human lactogenic hormones.
 A:Reference number: A94427
 A:Contents: annotation; somatotropin revision
 R:Bewley, T.A.; Dixon, J.S.; Li, C.H.
 Int. J. Pept. Protein Res. 4, 281-287, 1972
 A:Title: Sequence comparison of human pituitary growth hormone, human chorionic somatom
 A:Reference number: A91764; MUID:73092028
 A:Accession: A91764
 A:Molecule type: protein
 A:Residues: 27-217 <BEW>
 R:Lewis, U.J.; Bonevald, L.F.; Lewis, L.J.
 Biochem. Biophys. Res. Commun. 92, 511-516, 1980
 A:Title: The 20,000-dalton variant of human growth hormone: location of the amino acid
 A:Reference number: A90217; MUID:80130196
 A:Contents: somatotropin, 20K short variant
 A:Accession: A90217
 A:Molecule type: protein
 A:Residues: 46-57;73-80 <LEW>
 R:Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.; Ca
 J. Biol. Chem. 256, 2395-2401, 1981
 A:Title: The 20,000 molecular weight variant of human growth hormone. Preparation and so
 A:Reference number: A92311; MUID:81117361
 A:Contents: somatotropin, 20K short variant
 A:Accession: A92311
 A:Molecule type: protein
 A:Residues: 27-57;73-79 <CHA>
 R:Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
 J. Protein Chem. 2, 425-436, 1983
 A:Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
 A:Reference number: A61466
 A:Accession: A61466
 A:Molecule type: protein
 A:Residues: 27-69 <STN>
 R:Robson, V.M.J.; Rae, I.D.; NG, F.
 Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
 A:Title: Identification of the aspartimide structure in a previously-reported peptide.
 A:Reference number: S09685; MUID:90334745
 A:Accession: S09685
 A:Molecule type: protein
 A:Residues: 27-34; L, 36-47 <ROB>
 R:de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
 Science 255, 306-312, 1992
 A:Title: Human growth hormone and extracellular domain of its receptor: crystal structu
 A:Reference number: A41728; MUID:92196577
 A:Contents: annotation; X-ray crystallography, 2.8 angstroms
 R:Gray, G.L.; Balridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
 Gene 39, 247-254, 1985

A:Title: Periplasmic production of correctly processed human growth hormone in Escher
 A:Reference number: I41126; MUID:86137393
 A:Accession: I84549
 A:Status: preliminary; translated from GB/EMBL/DBBJ
 A:Molecule type: mRNA
 A:Residues: 1-26 <RES>
 A:Cross-references: GDB:119982; OMIM:139250
 A:Map position: 17q23.1-17q23.3
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; pituitary
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 1, long form #status experimental <SOL>
 F:27-69/Product: growth hormone 5K peptide #status experimental <SKP>
 F:27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
 F:79-191,208-215/Disulfide bonds: #status experimental
 A:Gene: GDB:GH1
 A:Cross-references: GDB:119982; OMIM:139250
 A:Map position: 17q23.1-17q23.3
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; pituitary
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 1, long form #status experimental <SOL>
 F:27-69/Product: growth hormone 5K peptide #status experimental <SKP>
 F:27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
 F:79-191,208-215/Disulfide bonds: #status experimental
 Query Match 16.3%; Score 22; DB 1; Length 217;
 Best Local Similarity 100.0%; Pred. No. 2.6e-14; Mismatches 0; Indels 0; Gaps 0;
 Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 114 LKLDLEEGTQTLNGRLDGSPR 135
 |||||
 Db 139 LKLDLEEGTQTLNGRLDGSPR 160
 |||||
 RESULT 6
 I67410
 somatotropin - rhesus macaque
 N:Alternate names: growth hormone
 C:Species: Macaca mulatta (rhesus macaque)
 C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
 C:Accession: I67410; A05094
 R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
 Endocrinology 133, 1744-1752, 1993
 A:Title: Cloning of four growth hormone/chorionic somatomotropin-related complemen
 A:Reference number: I53267; MUID:94008724
 A:Accession: I67410
 A:Status: translated from GB/EMBL/DBBJ
 A:Molecule type: mRNA
 A:Residues: 1-217 <RES>
 A:Cross-references: GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g293115
 R:Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.
 Arch. Biochem. Biophys. 245, 287-291, 1986
 A:Title: The primary structure of monkey pituitary growth hormone.
 A:Reference number: A05094; MUID:86129460
 A:Accession: A05094
 A:Molecule type: protein
 A:Residues: 27-99,'Q',101-178,'D',180-217 <LIC>
 A:Note: the monkey species is not identified in the reference
 R:Raben, M.S.
 Science 125, 883-884, 1957
 A:Title: Preparation of growth hormone from pituitaries of man and monkey.
 A:Reference number: A44774
 A:Contents: annotation; Identification of source organism
 C:Superfamily: prolactin

Query Match 14.8%; Score 20; DB 2; Length 217;
 Best Local Similarity 100.0%; Pred. No. 2.6e-12;
 Matches 20; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 114 LKLDLEEGTQTLNGRLDGSPR 133
 |||||
 Db 139 LKLDLEEGTQTLNGRLDGSPR 158
 |||||

```
RESULT 7
167408
Chorionic somatomammotropin-2 - rhesus macaque (fragment)
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67408
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementation
A:Reference number: I53267; MUID:94008724
A:Accession: I67408
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-212 <RES>
A:Cross-references: GB:L16553; NID:g293110; PIDN:AAAL8840.1; PID:g293111
C:Superfamily: prolactin

Query Match 14.1%; Score 19; DB 2; Length 212;
Best Local Similarity 100.0%; Pred. No. 2.7e-11;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 66 EETQOKSNLELLRISLLLI 84
|||||
DB 86 EETQOKSNLELLRISLLLI 104

RESULT 8
167409
Chorionic somatomammotropin-3 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67409
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementation
A:Reference number: I53267; MUID:94008724
A:Accession: I67409
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:L16554; NID:g293112; PIDN:AAAL8841.1; PID:g293113
C:Superfamily: prolactin

Query Match 14.1%; Score 19; DB 2; Length 217;
Best Local Similarity 100.0%; Pred. No. 2.7e-11;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 66 EETQOKSNLELLRISLLLI 84
|||||
DB 91 EETQOKSNLELLRISLLLI 109

RESULT 9
153267
Chorionic somatomammotropin-1 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I53267
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementation
A:Reference number: I53267; MUID:94008724
A:Accession: I53267
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:L16552; NID:g293108; PIDN:AAAL8839.1; PID:g293109
C:Superfamily: prolactin

Query Match 14.1%; Score 19; DB 2; Length 217;
```

```
Best Local Similarity 100.0%; Pred. No. 2.7e-11;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 66 EETQOKSNLELLRISLLLI 84
|||||
DB 91 EETQOKSNLELLRISLLLI 109

RESULT 10
167411
somatotropin - rhesus macaque
N:Alternate names: growth hormone
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67411
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementation
A:Reference number: I53267; MUID:94008724
A:Accession: I67411
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g293117
C:Superfamily: prolactin

Query Match 13.3%; Score 18; DB 2; Length 217;
Best Local Similarity 100.0%; Pred. No. 2.7e-10;
Matches 18; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 118 LEEGIQTLMGRLEDGSPR 135
|||||
DB 143 LEEGIQTLMGRLEDGSPR 160

RESULT 11
STHUV
somatotropin 2 precursor - human
N:Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin
C:Species: Homo sapiens (man)
C:Date: 17-Dec-1982 #sequence_revision 10-Feb-1995 #text_change 21-Jul-2000
C:Accession: D32435; B28072; A01511; I52104; A50711
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: D32435
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: GB:J03071; NID:gl83148; PIDN:AAA52552.1; PID:gl83152
R:Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.
J. Biol. Chem. 263, 9001-9006, 1988
A:Title: Two distinct species of human growth hormone-variant mRNA in the human place
A:Reference number: A92725; MUID:88243769
A:Accession: B28072
A:Molecule type: mRNA
A:Residues: 1-217 <COO>
R:Seeburg, P.H.
DNA 1, 239-249, 1982
A:Title: The human growth hormone gene family: nucleotide sequences show recent diver
A:Reference number: A01511; MUID:83182010
A:Accession: A01511
A:Molecule type: DNA
R:Igout, A.; Scippo, M.L.; Frankenne, F.; Hennen, G.
Arch. Int. Physiol. Biochim. 96, 63-67, 1988
A:Title: Cloning and nucleotide sequence of placental hGH-V cDNA.
A:Reference number: I52104; MUID:89024984
A:Accession: I52104
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
```

A:Residues: 1-217 <IGO>
 A:Cross-references: GB:M38451; NID:g183179; PIDN:AAA35891.1; PID:g183180
 R:Frankenne, F.; Scippo, M.L.; Van Beunnen, J.; Igout, A.; Hennen, G.
 J. Clin. Endocrinol. Metab. 71, 15-18, 1990
 A:Title: Identification of placental human growth hormone as the growth hormone-V gene
 A:Reference number: A60711; MUID:90317018
 A:Accession: A60711
 A:Molecule type: protein
 A:Residues: 27-44; 46-57 <FRA>
 A:Experimental source: tissue placenta
 A:Note: partial glycosylation was demonstrated by lectin binding
 C:Comment: This gene is expressed by the placenta.
 C:Genetics:
 A:Gene: GDB:GH2
 A:Cross-references: GDB:119983; OMIM:139240
 A:Map position: 17q22-17q24
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; glycoprotein; hormone; placenta
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 2, long splice form #status predicted <SOL>
 F:27-57.73-217/Product: somatotropin 2, short splice form #status predicted <SOS>
 F:79-191,208-215/Disulfide bonds: #status predicted
 F:166/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 12.6%; Score 17; DB 1; Length 217;
 Best Local Similarity 100.0%; Pred. No. 2.7e-09;
 Matches 17; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 68 TQKSNLELLRISLLLI 84
 |||||
 Db 93 TQKSNLELLRISLLLI 109

RESULT 12
 STHV2
 Somatotropin 2 precursor, splice form 2 - human
 A:Alternate names: growth hormone variant-2; placental somatotropin form 2
 C:Species: Homo sapiens (man)
 C:Date: 30-Sep-1989 #sequence_revision 10-Feb-1995 #text_change 02-Sep-1997
 C:Accession: A28072
 R:Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.
 J. Biol. Chem. 263, 9001-9006, 1988
 A:Title: Two distinct species of human growth hormone-variant mRNA in the human placenta
 A:Reference number: A92725; MUID:88243769
 A:Accession: A28072
 A:Molecule type: mRNA
 A:Residues: 1-256 <COO>
 A:Note: an alternative splice junction for intron 4 is used
 C:Genetics:
 A:Gene: GDB:GH2
 A:Cross-references: GDB:119983; OMIM:139240
 A:Map position: 17q22-17q24
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; placenta
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

Query Match 12.6%; Score 17; DB 1; Length 256;
 Best Local Similarity 100.0%; Pred. No. 3.1e-09;
 Matches 17; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 68 TQKSNLELLRISLLLI 84
 |||||
 Db 93 TQKSNLELLRISLLLI 109

RESULT 13
 STBO
 somatotropin precursor [validated] - bovine

N:Alternate names: growth hormone
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 15-Sep-2000
 C:Accession: I45900; JCL1316; A92283; I45898; I45901; A36506; A91396; A90187; A91208;
 R:Gordon, D.F.; Quick, D.P.; Erwin, C.R.; Donelson, J.E.; Maurer, R.A.
 Mol. Cell. Endocrinol. 33, 81-95, 1983
 A:Title: Nucleotide sequence of the bovine growth hormone chromosomal gene.
 A:Reference number: I45900; MUID:84058733
 A:Accession: I45900
 A>Status: translated from GB/EMBL/DBJ
 A:Molecule type: DNA
 A:Residues: 1-217 <GOR>
 A:Cross-references: GB:M57764; NID:g163091; PIDN:AAA30544.1; PID:g163092
 R:Li, B.L.; Liang, Z.H.; Yang, X.Y.; Gan, K.D.; Zhou, B.; Li, Q.L.; Tang, J.Y.
 Acta Biochim. Biophys. Sin. 26, 505-512, 1994
 A:Title: Synthesis, cloning and high-level expression of the bovine growth hormone ge
 A:Reference number: JCL1316
 A:Accession: JCL1316
 A:Molecule type: DNA
 A:Residues: 'M', 27-148, 'C', 150-193, 'R', 195-217 <LIB>
 R:Miller, W.L.; Martial, J.A.; Baxter, J.D.
 J. Biol. Chem. 255, 7521-7524, 1980
 A:Title: Molecular cloning of DNA complementary to bovine growth hormone mRNA.
 A:Reference number: A92283; MUID:80249494
 A:Accession: A92283
 A:Molecule type: mRNA
 A:Residues: 1-217 <MIL>
 A:Cross-references: GB:V00111; NID:g399; PIDN:CAA23445.1; PID:g400
 R:Seeburg, P.H.; Slas, S.; Adelman, J.P.; de Boer, H.A.; Hayflick, J.; Jhurani, P.; G
 DNA 2, 37-45, 1983
 A:Title: Efficient bacterial expression of bovine and porcine growth hormones.
 A:Reference number: I45898; MUID:83209123
 A:Accession: I45898
 A>Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-217 <SEE>
 A:Cross-references: GB:M27325; NID:g163089; PIDN:AAA30543.1; PID:g163090
 R:George, H.J.; L'Italien, J.J.; Pilacinski, W.P.; Glassman, D.L.; Krzyzek, R.A.
 DNA 4, 273-281, 1985
 A:Title: High-level expression in Escherichia coli of biologically active bovine grow
 A:Reference number: I45901; MUID:86004063
 A:Accession: I45901
 A>Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 'M', 27-49 <GEO>
 A:Cross-references: GB:M11558; NID:g163093; PIDN:AAA30545.1; PID:g163094
 R:Wood, D.C.; Salsgiver, W.J.; Kasser, T.R.; Lange, G.W.; Rowold, E.; Vieland, B.N.;
 Row, J.R.; Bild, G.; Krivi, G.G.
 J. Biol. Chem. 264, 14741-14747, 1989
 A:Title: Purification and characterization of pituitary bovine somatotropin.
 A:Reference number: A36506; MUID:89359269
 A:Accession: A36506
 A>Status: preliminary
 A:Molecule type: protein
 A:Residues: 27-34; 152, 'V', 154-159 <WOO>
 R:Wallis, M.
 FEBS Lett. 35, 11-14, 1973
 A:Title: The primary structure of bovine growth hormone.
 A:Reference number: A91396; MUID:74028758
 A:Accession: A91396
 A:Molecule type: protein
 A:Residues: 27-217 <WAL>
 A:Note: 153-Val was found in one-third of the molecules
 R:Graf, L.; Li, C.H.
 Biochem. Biophys. Res. Commun. 56, 168-176, 1974
 A:Title: On the primary structure of pituitary bovine growth hormone.
 A:Reference number: A90187; MUID:74146429
 A:Accession: A90187
 A:Molecule type: protein
 A:Residues: 91-96; 104-121 <GRA>
 R:Santome, J.A.; Dellacha, J.M.; Paladini, A.C.; Pena, C.; Biscoglio, M.J.; Daurat, S
 Eur. J. Biochem. 37, 164-170, 1973
 A:Title: Primary structure of bovine growth hormone.

A:Reference number: A91208; MUID:73249153
A:Accession: A91208
A:Molecule type: protein
A:Residues: 27-94,'E',96-109,'SQ',112-113,'Q',115,'G',118-119,121-193,'N',195-217 <SANT>
R:Seavey, B.K.; Singh, R.N.P.; Lewis, U.J.; Geschwind, I.I.
Biochem. Biophys. Res. Commun. 43, 189-195, 1971
A:Title: Bovine growth hormone: evidence for two allelic forms.
A:Reference number: A90171; MUID:71207803
A:Contents: annotation
A>Note: analysis of tryptic peptides from individual animals confirms the existence of a n erythrocyte membranes similar to that of human somatotropin
R:Yamasaki, N.; Shimanaka, J.; Sonnenburg, M.
J. Biol. Chem. 250, 2510-2514, 1975
A:Title: Studies on the common active site of growth hormone. Revision of the amino acid
A:Reference number: A92175; MUID:75133461
A:Contents: annotation
A>Note: a fragment corresponding to residues 122-159 in the sequence shown had growth-pr
n erythrocyte membranes similar to that of human somatotropin
R:Carliacci, L.; Chou, K.C.; Maggiora, G.M.
submitted to the Brookhaven Protein Data Bank, February 1991
A:Reference number: A50827; PDB:1BSF
A:Contents: annotation; theoretical model, residues 27-217
R:Carliacci, L.; Chou, K.C.; Maggiora, G.M.
Biochemistry 30, 4389-4398, 1991
A:Title: A heuristic approach to predicting the tertiary structure of bovine somatotropin
A:Reference number: A30630; MUID:91214979
A:Contents: annotation; theoretical model
C:Genetics:
A:Gene: GH1
A:Introns: 5/1; 58/3; 97/3; 151/3
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-217/Product: somatotropin #status experimental <MAT>
F:79-190,207-215/Disulfide bonds: #status experimental

Query Match 8.1%; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.0028;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRLISLLLI 84
|||||
Db 99 LELLRLISLLLI 109

RESULT 14
STSH
somatotropin precursor - sheep
N:Alternate names: growth hormone
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C>Date: 30-Sep-1991 #sequence.revision 30-Sep-1991 #text.change 18-Jun-1999
C:Accession: S02225; S04969; A33228; A33229; I47081; A01515
R:Orlani, J.M.; O'Mahoney, J.V.; Brandon, M.R.
Nucleic Acids Res. 16, 9046, 1988
A:Title: Cloning and sequencing of the ovine growth hormone gene.
A:Reference number: S02225; MUID:89016583
A:Accession: S02225
A:Molecule type: DNA
A:Residues: 1-217 <ORI>
A:Cross-references: EMBL:X12546; NID:gl1792; PIDN:CAA31063.1; PID:gl1793
R:Warwick, J.M.; Wallis, O.C.; Wallis, M.
Biochim. Biophys. Acta 1008, 247-250, 1989
A:Title: Cloning, sequence and expression in Escherichia coli of cDNA for ovine pregrowth
A:Reference number: S04969; MUID:89287334
A:Accession: S04969
A:Molecule type: mRNA
A:Residues: 1-217 <WAR>
A:Cross-references: GB:X15976; NID:g609665; PIDN:CAA34098.1; PID:g609666
R:Li, C.H.; Gordon, D.; Knorr, J.
Arch. Biochem. Biophys. 156, 493-508, 1973
A:Title: The primary structure of sheep pituitary growth hormone.
A:Reference number: A90055; MUID:73220070
A:Accession: A33228

A:Molecule type: protein
A:Residues: 27-124,'D',126-217 <LIC>
R:Bellaïr, J.T.
Biochem. Biophys. Res. Commun. 46, 1128-1134, 1972
A:Title: Ovine growth hormone sequence of the C-terminal 68 amino acids.
A:Reference number: A90177; MUID:72134042
A:Accession: A33229
A:Molecule type: protein
A:Residues: 150-217 <BEL>
R:Byrne, C.R.; Wilson, B.W.; Ward, K.A.
Aust. J. Biol. Sci. 40, 459-468, 1987
A:Title: The isolation and characterisation of the ovine growth hormone gene.
A:Reference number: I47081; MUID:88268619
A:Accession: I47081
A:Status: preliminary; translated from GB/EMBL/DBDJ
A:Molecule type: DNA
A:Residues: 1-88,'S',90-133,'L',135-217 <BYR>
A:Cross-references: GB:M37310; NID:g165886; PIDN:AAA31527.1; PID:g165887
C:Genetics:
A:Introns: 5/1; 58/3; 97/3; 151/3
C:Superfamily: prolactin
C:Keywords: hormone; pituitary
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-217/Product: somatotropin #status experimental <MAT>
F:79-190,207-215/Disulfide bonds: #status experimental

Query Match 8.1%; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.0028;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRLISLLLI 84
|||||
Db 99 LELLRLISLLLI 109

RESULT 15
STGT
somatotropin precursor - goat
N:Alternate names: growth hormone
C:Species: Capra aegagrus hircus (domestic goat)
C>Date: 30-Sep-1990 #sequence.revision 30-Sep-1990 #text.change 16-Jun-2000
C:Accession: S00321; JU0031; S00681; J70480
R:Yamano, Y.; Oyabayashi, K.; Okuno, M.; Yato, M.; Kioka, N.; Manabe, E.; Hashi, H.;
FEBS Lett. 226, 301-304, 1988
A:Title: Cloning and sequencing of cDNA that encodes goat growth hormone.
A:Reference number: S00321; MUID:88137627
A:Accession: S00321
A:Molecule type: mRNA
A:Residues: 1-217 <YAM>
A:Cross-references: EMBL:Y00767; NID:g975; PIDN:CAA68736.1; PID:g976
R:Kioka, N.; Manabe, E.; Abe, M.; Hashi, H.; Yato, M.; Okuno, M.; Yamano, Y.; Sakai,
Agric. Biol. Chem. 53, 1583-1587, 1989
A:Title: Cloning and sequencing of goat growth hormone gene.
A:Reference number: JU0031
A:Accession: JU0031
A:Molecule type: DNA
A:Residues: 1-217 <KIO>
A:Cross-references: GB:D00476; NID:g217664; PIDN:BAA00368.1; PID:g217665
R:Yato, M.; Yamano, Y.; Oyabayashi, K.; Okuno, M.; Kioka, N.; Manabe, E.; Hashi, H.;
Nucleic Acids Res. 16, 3578, 1988
A:Title: Nucleotide sequence of the growth hormone gene cDNA from goat Capra hircus L
A:Reference number: S00681; MUID:88233947
A:Accession: S00681
A:Molecule type: mRNA
A:Residues: 1-217 <KIO>
A:Cross-references: GB:X07035; NID:g973; PIDN:CAA30083.1; PID:g974
A:Experimental source: subspecies Tokara
C:Genetics:
A:Introns: 5/1; 58/3; 97/3; 151/3
C:Superfamily: prolactin
C:Keywords: anterior pituitary; growth factor; hormone

F:1-26/Domain: signal sequence #status predicted <SIG>
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F:79-190,207-215/Disulfide bonds: #status predicted

Query Match 8.18; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.0028;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 74 LELLRISLLI 84
|||||
Db 99 LELLRISLLI 109

Search completed: September 25, 2002, 10:06:17
Job time: 155 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 10:05:52 ; Search time 11.93 Seconds

(without alignments)
436.151 Million cell updates/sec

Title: US-09-819-094-18

Perfect score: 135

Sequence: 1 MVQTVPLSRFLFDHMLQAHK.....KDLEGGIQTLMGRLEDGSPR 135

Scoring table: OLIGO

Gapop 60.0 , Gapext 60.0

Searched: 105224 seqs, 38719550 residues

Word size : 0

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 1000 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query	Length	ID	Description
1	79	58.5	217	1 PLL_HUMAN	P01243 homo sapien
2	22	16.3	217	1 SOMA_HUMAN	P01241 homo sapien
3	21	15.6	217	1 SOMA_CALTA	Q9gmb3 callithrix
4	20	14.8	217	1 SOMA_MACMU	P33093 macaca mula
5	16	11.9	217	1 SOMV_HUMAN	P01242 homo sapien
6	16	11.9	256	1 SOMW_HUMAN	P09587 homo sapien
7	15	11.1	217	1 SOMA_SAIIB	P58343 salmieri bol
8	12	8.9	217	1 SOMV_MACMU	Q07370 macaca mula
9	11	8.1	217	1 SOMA_BOVIN	P01246 bos taurus
10	11	8.1	217	1 SOMA_BUBBU	O18938 bubalus bub
11	11	8.1	217	1 SOMA_CEREL	P36437 cervus elap
12	11	8.1	217	1 SOMA_SHEEP	P01247 ovis aries
13	9	6.7	190	1 SOMA_BALBO	P33092 balaenopter
14	9	6.7	190	1 SOMA_LAMPA	P37885 lama guanac
15	9	6.7	190	1 SOMA_LOXAF	P20392 loxodonta a
16	9	6.7	190	1 SOMA_VULVU	P10766 vulpes vulp
17	9	6.7	216	1 SOMA_ANAPL	P11228 anas platyr
18	9	6.7	216	1 SOMA_CANFA	P33711 canis famil
19	9	6.7	216	1 SOMA_CHICK	P08998 gallus gall
20	9	6.7	216	1 SOMA_FELCA	P46404 felis silve
21	9	6.7	216	1 SOMA_MELGA	P22077 meleagris g
22	9	6.7	216	1 SOMA_MESAU	P37886 mesocricetu
23	9	6.7	216	1 SOMA_MOUSE	P06880 mus musculet
24	9	6.7	216	1 SOMA_MUSVI	P19795 mustela vis
25	9	6.7	216	1 SOMA_PIG	P01248 sus scrofa
26	9	6.7	216	1 SOMA_RABIT	P46407 oryctolagus
27	9	6.7	216	1 SOMA_RAT	P01244 rattus norv
28	9	6.7	217	1 SOMA_GALSE	Q9gkal galago sene
29	9	6.7	217	1 SOMA_NICPY	Q9gm62 nycticebus
30	9	6.7	217	1 SOMA_STRCA	Q9pwb3 struthio ca
31	8	5.9	190	1 SOM1_ACIGU	P26773 acipenser g
32	8	5.9	190	1 SOM2_ACIGU	P26774 acipenser g
33	8	5.9	675	1 KSC5_ECOLI	P42217 escherichia

051425	borrelia bu	1	LSPA_BORBU	170	5	2	7	34
P55755	crocodylus	1	SOMA_CRONO	190	5	2	7	35
P34005	chelonina my	1	SOMA_CHEMY	191	5	2	7	36
P08899	anguilla ja	1	SOMA_ANGJA	209	5	2	7	37
Q9g160	monodelphis	1	SOMA_MONDO	215	5	2	7	38
Q62754	trichosurus	1	SOMA_TRIVU	215	5	2	7	39
P01245	equus cabal	1	SOMA_HORSE	216	5	2	7	40
P05088	phaseolus v	1	PHAE_PHAVU	275	5	2	7	41
Q03842	rhizobium m	1	FLBI_RHIME	394	5	2	7	42
P13119	rhizobium m	1	FLB2_RHIME	395	5	2	7	43
Q52942	rhizobium m	1	FLD2_RHIME	395	5	2	7	44
P58330	rhizobium m	1	FLD1_RHIME	401	5	2	7	45
Q09474	caenorhabdi	1	T230_CAEEL	403	5	2	7	46
Q9h257	homo sapien	1	CAR9_HUMAN	536	5	2	7	47
Q01826	homo sapien	1	SAT1_HUMAN	763	5	2	7	48
Q60611	mus musculet	1	SAT1_MOUSE	764	5	2	7	49
Q9pkn3	campylobact	1	SYL_CAMJE	809	5	2	7	50
Q926w0	chlamydia p	1	SYG_CHLPN	1010	5	2	7	51
P41673	autographa p	1	Y120_NPVAC	82	4	4	6	52
Q05295	mycobacteri	1	VG80_BPML5	94	6	4	4	53
Q67904	aquifex aeo	1	GATC_AQUAE	94	6	4	4	54
Q92114	rickettsia	1	RBFA_RICCN	120	6	4	4	55
P38357	saccharomyc	1	YB8F_YEAST	123	6	4	4	56
P75450	mycoplasma	1	YB12_MYCPN	130	6	4	4	57
P02690	bos taurus	1	MYP2_BOVIN	131	6	4	4	58
P02689	homo sapien	1	MYP2_RABIT	131	6	4	4	59
P02691	oryctolagus	1	MYP2_RABIT	131	6	4	4	60
P53856	saccharomyc	1	YNX5_YEAST	143	6	4	4	61
P26379	bacillus su	1	PTFA_BACSU	146	6	4	4	62
Q03379	saccharomyc	1	YM8W_YEAST	150	6	4	4	63
Q916d1	pseudomonas	1	COAD_PSEAE	159	6	4	4	64
P03581	sunn-hemp m	1	COAT_SHMV	162	6	4	4	65
P23100	pseudomonas	1	XYLY_PSEPU	162	6	4	4	66
Q98924	gallus gall	1	HXA9_CHICK	169	6	4	4	67
P25085	mus musculus	1	ILIX_MOUSE	178	6	4	4	68
P25086	rattus norv	1	ILIX_RAT	178	6	4	4	69
Q34955	legionella	1	IPYR_LEGPN	178	6	4	4	70
Q9rgql	rhodospiril	1	IPYR_RHORU	179	6	4	4	71
P34006	phionace gl	1	SOMA_PRIGL	183	6	4	4	72
P13276	mandauca sex	1	APL3_MANSE	189	6	4	4	73
Q04613	arabidopsis	1	MI25_ARATH	192	6	4	4	74
P23513	triticum ae	1	MI25_WHEAT	193	6	4	4	75
Q06599	mycobacteri	1	YF91_MYCTU	193	6	4	4	76
P49906	drosophila	1	T2D9_DROME	196	6	4	4	77
Q00058	oryza sativ	1	MI25_ORYSA	197	6	4	4	78
P09003	nicotiana t	1	MI25_TOBAC	198	6	4	4	79
Q35543	rattus norv	1	PGD_RAT	198	6	4	4	80
P04515	bovine rota	1	VS11_ROTBU	198	6	4	4	81
P23047	human rotav	1	VS11_ROTTH	198	6	4	4	82
P18036	human rotav	1	VS11_ROTTH	198	6	4	4	83
P23048	human rotav	1	VS11_ROTTH	198	6	4	4	84
P17467	rabbit r	1	VS11_ROTTH	198	6	4	4	85
P11202	simian l1 r	1	VS11_ROTTH	198	6	4	4	86
Q9zmz7	helicobacte	1	UREG_HELPJ	199	6	4	4	87
Q09066	helicobacte	1	UREG_HELPJ	199	6	4	4	88
P18037	human rotav	1	VS11_ROTTH	200	6	4	4	89
Q927t4	chlamydia p	1	RUWA_CHLPN	207	6	4	4	90
P12856	xenopus lae	1	SOMB_XENLA	208	6	4	4	91
P50283	mus musculus	1	CD7_MOUSE	210	6	4	4	92
Q9h0t7	homo sapien	1	RB17_HUMAN	212	6	4	4	93
P34558	caenorhabdi	1	YOUB_CAEEL	213	6	4	4	94
P12855	xenopus lae	1	SOMA_XENLA	214	6	4	4	95
P09115	oryctolagus	1	CASI_RABIT	215	6	4	4	96
P31492	versinia pe	1	YOPE_YEREN	219	6	4	4	97
P31493	versinia pe	1	YOPE_YERPE	219	6	4	4	98
P08008	versinia ps	1	YOPE_YERPS	219	6	4	4	99
Q62816	ovis aries	1	SCAB_SHEEP	221	6	4	4	100
Q60353	methanococc	1	Y045_METJA	221	6	4	4	101
Q04942	streptomyce	1	AFQI_STRCO	225	6	4	4	102
Q05598	salmonella	1	CBIQ_SALTY	225	6	4	4	103
P42244	bacillus su	1	YCBL_BACSU	226	6	4	4	104
P09781	agrobacteri	1	VIB8_AGRTE	230	6	4	4	105
P05357	agrobacteri	1	VIB8_AGRTE	230	6	4	4	106

107	6	4.4	233	1	ATTB_HYACE	P01512	hyalophora	180	6	4.4	541	1	PCCB_RAT	P07633	rattus norv
108	6	4.4	240	1	SWS2_MOUSE	Q9d4j1	mus musculus	181	6	4.4	541	1	YDCG_ECOLI	P40120	escherichia
109	6	4.4	244	1	ADC_CLOABE	P23670	clostridium	182	6	4.4	544	1	GRKA_BACSU	P49939	bacillus su
110	6	4.4	261	1	ZNUB_ECOLI	P39832	escherichia	183	6	4.4	544	1	MLH1_HORVU	O41073	hordium vul
111	6	4.4	265	1	MURI_PEDPE	Q08783	pediococcus	184	6	4.4	564	1	VA55_VACCC	P21073	vaccinia vi
112	6	4.4	271	1	ALLR_ECOLI	P77734	escherichia	185	6	4.4	564	1	VA55_VACCV	P24768	vaccinia vi
113	6	4.4	272	1	Y177_BACHD	Q9k9c7	bacillus ha	186	6	4.4	593	1	KPYA_TOBAC	Q40545	nicotiana t
114	6	4.4	290	1	GSPC_AERHY	P45790	aeromonas h	187	6	4.4	602	1	HOXF_ALCEU	P22317	alcaligenes
115	6	4.4	290	1	GSPC_AERSA	O45772	aeromonas s	188	6	4.4	608	1	ATOS_ECOLI	Q06067	escherichia
116	6	4.4	290	1	Y229_SYNY3	O55702	synecocyst	189	6	4.4	611	1	HBS1_YEAST	P32769	saccharomyc
117	6	4.4	297	1	KHSE_AQUAE	O67332	aquifex aeo	190	6	4.4	612	1	ADFL_CANAL	P46589	candida alb
118	6	4.4	303	1	PPXL_PARTE	P49576	paramecium	191	6	4.4	624	1	NIFA_AZOLI	P54929	azospirillum
119	6	4.4	306	1	SDSB_PSES9	P52686	pseudomonas	192	6	4.4	625	1	NIFA_AZOBR	P30667	azospirillum
120	6	4.4	310	1	CRUB_SULAC	O54089	sulfolobus	193	6	4.4	630	1	GIDA_PSEUP	P25756	pseudomonas
121	6	4.4	312	1	TRUB_VIBCH	Q9ku78	vibrio chol	194	6	4.4	634	1	SELB_MOOTH	Q46455	moorella th
122	6	4.4	316	1	T2BB_BACSU	P33562	bacillus su	195	6	4.4	638	1	SCAB_MOUSE	Q9wu38	mus musculus
123	6	4.4	326	1	Y883_PVRHO	O58613	pyrococcus	196	6	4.4	638	1	SCAB_RAT	P37090	rattus norv
124	6	4.4	328	1	YIAO_HAEIN	P44992	haemophilus	197	6	4.4	640	1	SCAB_HUMAN	P51168	homo sapien
125	6	4.4	334	1	MRPL_CABEL	Q93459	caenorhabdi	198	6	4.4	641	1	SCAB_RABIT	O97742	oryctolagus
126	6	4.4	335	1	Y676_METJA	O58089	methanococc	199	6	4.4	662	1	YAB8_YEAST	P39722	saccharomyc
127	6	4.4	339	1	ENDA_HALVO	O07118	halobacteri	200	6	4.4	664	1	UL47_HSVIF	P08313	herpes simp
128	6	4.4	344	1	FLIM_TREPA	P74927	treponema p	201	6	4.4	666	1	POL_FWVD	P09523	figwort mos
129	6	4.4	345	1	RTA4_TOXGO	Q27002	toxoplasma	202	6	4.4	670	1	YAYF_SCHPO	O10222	schizosacch
130	6	4.4	353	1	GRCA_AERPE	O9ves0	aeropyrum p	203	6	4.4	674	1	CFP4_SCHPO	P87312	schizosacch
131	6	4.4	355	1	LAVI_PHYPO	P14725	physarum po	204	6	4.4	676	1	ICP0_HSVBJ	P29128	bovine herp
132	6	4.4	356	1	VP7_BRD	P35935	broadhaven	205	6	4.4	676	1	ICP0_HSVBK	P29836	bovine herp
133	6	4.4	359	1	PST_CRIGR	Q64690	cricetulus	206	6	4.4	693	1	UL47_HSV11	P10231	herpes simp
134	6	4.4	359	1	PST_HUMAN	O92187	homo sapien	207	6	4.4	693	1	HXIA_WAIZE	P46605	zea mays (m
135	6	4.4	359	1	PST_MOUSE	O64692	mus musculus	208	6	4.4	719	1	ETRI_ARATH	P49333	arabidopsis
136	6	4.4	359	1	RF1_CHLNU	O9pl16	chlamydia m	209	6	4.4	738	1	YAB8_SCHPO	Q09772	schizosacch
137	6	4.4	362	1	NULC_ORYSA	P12124	oryza sativ	210	6	4.4	768	1	VAC1_HUMAN	Q91034	homo sapien
138	6	4.4	369	1	YOK3_CABEL	P91478	caenorhabdi	211	6	4.4	780	1	VAC1_RABIT	Q23425	oryctolagus
139	6	4.4	376	1	FUT1_MOUSE	Q09160	mus musculus	212	6	4.4	780	1	VAC1_RAT	Q91j31	rattus norv
140	6	4.4	376	1	FUT1_RAT	Q10980	rattus norv	213	6	4.4	792	1	RIR1_HUMAN	P23921	homo sapien
141	6	4.4	376	1	MID2_YEAST	P36027	saccharomyc	214	6	4.4	792	1	RIR1_MOUSE	P07742	mus musculus
142	6	4.4	379	1	CYB_LOXAF	P24958	loxodonta a	215	6	4.4	794	1	RIR1_BRARE	P79732	brachydanio
143	6	4.4	384	1	CYNX_ECOLI	P17583	escherichia	216	6	4.4	795	1	GCR_RAT	P06536	rattus norv
144	6	4.4	404	1	YBR3_YEAST	P38083	saccharomyc	217	6	4.4	795	1	P5CS_HUMAN	P54886	h delta 1-p
145	6	4.4	405	1	ARRS_PIG	P79260	sus scrofa	218	6	4.4	795	1	P5CS_MOUSE	Q92i10	m delta 1-p
146	6	4.4	407	1	COAT_BBV	P04329	black beetl	219	6	4.4	796	1	YH04_YEAST	P38888	saccharomyc
147	6	4.4	407	1	COAT_FHV	P12870	flock house	220	6	4.4	801	1	BRD2_HUMAN	P25440	homo sapien
148	6	4.4	411	1	FKB3_YEAST	P38911	saccharomyc	221	6	4.4	802	1	PMT2_SCHPO	O42832	schizosacch
149	6	4.4	418	1	PGK_EUPCR	O02608	euplotes cr	222	6	4.4	804	1	RIR1_PLAFG	P50647	plasmodium
150	6	4.4	422	1	YN23_YEAST	P53851	saccharomyc	223	6	4.4	806	1	RIR1_PLAF4	P50648	plasmodium
151	6	4.4	425	1	Y655_ARCFU	O29602	archaeoglob	224	6	4.4	806	1	SYL_HELPJ	Q92j63	helicobacte
152	6	4.4	429	1	URAA_ECOLI	P33780	escherichia	225	6	4.4	806	1	SYL_HELPJ	P56457	helicobacte
153	6	4.4	431	1	PUR8_BACSU	P12047	bacillus su	226	6	4.4	828	1	NAPA_ECOLI	P33937	escherichia
154	6	4.4	441	1	COAT_SOCMV	P15627	soybean chl	227	6	4.4	834	1	MSH5_HUMAN	O43196	homo sapien
155	6	4.4	451	1	GAGV_DROME	P10405	drosophila	228	6	4.4	840	1	UREA_CANEN	P07374	canavalia e
156	6	4.4	455	1	TBD_MOUSE	Q9rik7	mus musculus	229	6	4.4	843	1	EF2_DROME	P13060	drosophila
157	6	4.4	461	1	PUCG_RHOCA	P23462	rhodobacter	230	6	4.4	844	1	RRPO_IPNVS	P22174	infectious
158	6	4.4	463	1	YKAA_BACFI	P30267	bacillus fi	231	6	4.4	845	1	RRPO_IPNVJ	P22173	infectious
159	6	4.4	467	1	ISP6_SCHPO	P40903	schizosacch	232	6	4.4	851	1	EF2_CAEEL	P29691	caenorhabdi
160	6	4.4	467	1	VL2_HP333	P06418	human papil	233	6	4.4	857	1	EF2_CHICK	Q90705	gallus gall
161	6	4.4	470	1	PEPV_LACDL	P45494	lactobacill	234	6	4.4	857	1	EF2_CRIGR	P09445	cricketul
162	6	4.4	472	1	VL2_HPV58	P26538	human papil	235	6	4.4	857	1	EF2_HUMAN	P13639	homo sapien
163	6	4.4	478	1	TIG_AQUAE	O67358	aquifex aeo	236	6	4.4	857	1	EF2_MESAU	P05086	mesocricetu
164	6	4.4	486	1	YDBE_SCHPO	Q10367	schizosacch	237	6	4.4	857	1	EF2_MOUSE	P58252	mus musculus
165	6	4.4	494	1	AMYA_DROMA	P54215	drosophila	238	6	4.4	857	1	EF2_RAT	P05197	rattus norv
166	6	4.4	494	1	AMYA_DROMA	P51548	drosophila	239	6	4.4	906	1	NUOG_BUCAI	P57257	buchnera ap
167	6	4.4	497	1	SILS_SALTY	Q9zhd4	salmonella	240	6	4.4	917	1	HXX2_HUMAN	P52789	homo sapien
168	6	4.4	505	1	SRK1_SPOLA	P42686	spongilla l	241	6	4.4	917	1	HXX2_MOUSE	O08528	mus musculus
169	6	4.4	507	1	IRX3_MOUSE	P81067	mus musculus	242	6	4.4	917	1	HXX2_RAT	P27881	rattus norv
170	6	4.4	509	1	VP64_NPVOP	P13625	orgyia pseu	243	6	4.4	920	1	OGT1_HUMAN	O15294	homo sapien
171	6	4.4	509	1	VP67_NPVCF	P41717	choristoneu	244	6	4.4	937	1	DBS_RAT	Q63406	rattus norv
172	6	4.4	512	1	VP67_NPVAC	P17501	autographa	245	6	4.4	953	1	YA42_HUMAN	Q9upv9	homo sapien
173	6	4.4	515	1	MAD3_YEAST	P47074	saccharomyc	246	6	4.4	954	1	DRP2_HUMAN	Q13474	homo sapien
174	6	4.4	520	1	HDAC_DROME	Q94517	drosophila	247	6	4.4	956	1	RRPO_SBMV	P21405	southern be
175	6	4.4	533	1	MLO_HORVU	P93766	hordium vul	248	6	4.4	964	1	VOY1_CAREL	Q09560	caenorhabdi
176	6	4.4	538	1	NRF4_HAEIN	P45017	haemophilus	249	6	4.4	976	1	SCP1_HUMAN	Q15431	homo sapien
177	6	4.4	539	1	PCCB_HUMAN	P05166	homo sapien	250	6	4.4	989	1	SMB2_MESAU	Q60560	mesocricetu
178	6	4.4	539	1	PCCB_PIG	P79384	sus scrofa	251	6	4.4	993	1	SMB2_MOUSE	P40694	mus musculus
179	6	4.4	541	1	AIDB_ECOLI	P33224	escherichia	252	6	4.4	994	1	SYLM_NEUCR	P15181	neurospora

253	6	4.4	1036	1	OCT1_RAT	P6558	rattus norv	326	5	3.7	85	1	SCAS_MESMA	O9uac9	mesobuthus
254	6	4.4	1073	1	RAG1_ONCMY	Q91187	oncorhynch	327	5	3.7	86	1	SPAQ_SHIFL	P40705	shigella fl
255	6	4.4	1081	1	GALY_YEAST	P19659	saccharomyc	328	5	3.7	87	1	Y174_BURCE	P24580	burkholderi
256	6	4.4	1137	1	MSH3_HUMAN	P20585	homo sapien	329	5	3.7	89	1	CYB_BRANA	P49390	brassica na
257	6	4.4	1149	1	DBS_MOUSE	Q64096	mus musculu	330	5	3.7	89	1	YVAP_VACCC	P20525	vaccinia vi
258	6	4.4	1163	1	Y222_HUMAN	Q92618	homo sapien	331	5	3.7	91	1	E310_ADE05	P06497	human adeno
259	6	4.4	1176	1	HMDH_PHYBL	P12649	phycomyces	332	5	3.7	92	1	RR19_ODOSI	P49506	odontella s
260	6	4.4	1176	1	VPS8_YEAST	P39702	saccharomyc	333	5	3.7	92	1	VGLJ_HSV11	P06480	herpes simp
261	6	4.4	1224	1	DYNA_CHICK	P35458	gallus gall	334	5	3.7	93	1	RR20_ODOSI	P49507	odontella s
262	6	4.4	1226	1	KF4A_XENLA	Q91784	xenopus lae	335	5	3.7	93	1	Y060_ARCFU	O30176	archaeoglob
263	6	4.4	1258	1	YS00_ANASP	Q8ytc2	anabaena sp	336	5	3.7	93	1	YSC1_THEFL	P25124	thermus aqu
264	6	4.4	1271	1	Y338_MYCSE	P47580	mycoplasma	337	5	3.7	95	1	S10E_HUMAN	P25815	homo sapien
265	6	4.4	1301	1	RPOB_CHLVU	P56299	chlorella v	338	5	3.7	95	1	VFP7_SPVKA	P23332	swinepox vi
266	6	4.4	1317	1	RPOD_SYNY3	P73334	synechocyst	339	5	3.7	96	1	VPR_HVISC	P05951	human immun
267	6	4.4	1333	1	VGR1_MOUSE	P35969	mus musculu	340	5	3.7	96	1	YQEI_BACSU	P54454	bacillus su
268	6	4.4	1336	1	VGR1_RAT	P53767	rattus norv	341	5	3.7	98	1	S113_BOVIN	P79342	bos taurus
269	6	4.4	1338	1	VGR1_HUMAN	P17948	homo sapien	342	5	3.7	98	1	S113_HUMAN	Q99584	homo sapien
270	6	4.4	1360	1	GLI1_XENLA	Q91690	xenopus lae	343	5	3.7	98	1	S113_MOUSE	P97352	mus musculu
271	6	4.4	1395	1	IF4G_HUMAN	Q04637	homo sapien	344	5	3.7	98	1	SZ10_HUMAN	P02778	homo sapien
272	6	4.4	1398	1	PUS_PYRFU	P72186	pyrococcus	345	5	3.7	99	1	FANB_ECOLI	P07105	escherichia
273	6	4.4	1402	1	IF4G_RABIT	P41110	oryctolagus	346	5	3.7	99	1	Y420_HAEIN	P43995	haemophilus
274	6	4.4	1411	1	YM42_YEAST	Q03214	saccharomyc	347	5	3.7	100	1	VIN2_BPT4	P03719	bacterioph
275	6	4.4	1429	1	EXPA_DROME	Q07436	drosophila	348	5	3.7	100	1	YBO2_YEAST	P38223	saccharomyc
276	6	4.4	1451	1	A2M2_MOUSE	P28665	mus musculu	349	5	3.7	101	1	YBK8_YEAST	P38161	saccharomyc
277	6	4.4	1476	1	A2M1_MOUSE	P28665	mus musculu	350	5	3.7	102	1	L08_LYCES	Q43495	lycopersico
278	6	4.4	1477	1	AL13_RAT	P14046	rattus norv	351	5	3.7	102	1	VE7_PAPVE	P11332	european el
279	6	4.4	1649	1	YG44_SCHPO	O60179	schizosacch	352	5	3.7	103	1	CHLB_BAZTR	P37844	bazzania tr
280	6	4.4	1716	1	RPAL_RAT	O54889	rattus norv	353	5	3.7	103	1	PTLA_STAAM	P02909	staphylococ
281	6	4.4	1756	1	YCF1_PINTH	P41647	pinus thunb	354	5	3.7	104	1	CHLB_PICMA	P37853	picea maria
282	6	4.4	1786	1	LMB1_HUMAN	P07942	homo sapien	355	5	3.7	104	1	PTLA_STRMU	P26426	streptococc
283	6	4.4	1812	1	BRC1_MOUSE	P48754	mus musculu	356	5	3.7	104	1	YMF8_YEAST	Q04964	saccharomyc
284	6	4.4	1864	1	VGNB_RCMV	P35930	red clover	357	5	3.7	105	1	CPA2_CANPG	P81576	cancer pagu
285	6	4.4	1884	1	RRPO_ACLSP	P27738	apple chlor	358	5	3.7	105	1	YOPN_BACSU	O34369	bacillus su
286	6	4.4	1885	1	RRPO_ACLSP	P54891	apple chlor	359	5	3.7	106	1	FLIE_BACSU	P24502	bacillus su
287	6	4.4	2052	1	FYVL_MOUSE	Q921t6	mus musculu	360	5	3.7	106	1	YG76_MYCPN	P75116	mycoplasma
288	6	4.4	2265	1	FYVL_BOVIN	P07589	bos taurus	361	5	3.7	107	1	GPCF_MASLA	P29734	mastigoclad
289	6	4.4	2291	1	RRPB_BEV	P18458	berne virus	362	5	3.7	107	1	DPD4_HUMAN	Q9hcu8	homo sapien
290	6	4.4	2386	1	FINC_HUMAN	P02751	homo sapien	363	5	3.7	107	1	DPD4_MOUSE	Q9cwp8	mus musculu
291	6	4.4	2477	1	FINC_RAT	P04937	rattus norv	364	5	3.7	107	1	TBCA_BOVIN	P48427	bos taurus
292	6	4.4	2733	1	RRPB_TVMA5	P16342	murine coro	365	5	3.7	107	1	TBCA_HUMAN	O75347	homo sapien
293	6	4.4	3023	1	POIG_TVMA5	P09814	t genome po	366	5	3.7	107	1	TBCA_MOUSE	P48428	mus musculu
294	6	4.4	3027	1	POIG_PYFV1	Q05057	parsnip yel	367	5	3.7	107	1	TBCA_RABIT	P80594	oryctolagus
295	6	4.4	3144	1	VP13_YEAST	Q07878	saccharomyc	368	5	3.7	108	1	PHSM_KLEPN	P07094	klebsiella
296	6	4.4	3418	1	BRC2_HUMAN	P51587	homo sapien	369	5	3.7	108	1	YC20_PORPU	P51214	porphyra pu
297	5	3.7	27	1	DBH1_BIFLO	P17615	bifidobacte	370	5	3.7	109	1	V42_BPT3	P20316	bacterioph
298	5	3.7	34	1	Z33B_HUMAN	Q06731	homo sapien	371	5	3.7	110	1	INS_CAVPO	P01329	cavia porce
299	5	3.7	35	1	Y320_BORBU	O51299	borrelia bu	372	5	3.7	110	1	RL3E_METJA	P54061	methanococc
300	5	3.7	40	1	SAUV_PHYSA	P01144	phyllomedus	373	5	3.7	111	1	YG12_BACHD	O9kcf9	bacillus ha
301	5	3.7	44	1	Y135_HELPY	O24948	helicobacte	374	5	3.7	113	1	GP57_BPSPI	O48411	bacterioph
302	5	3.7	48	1	ATPB_CANPA	P17345	candida par	375	5	3.7	113	1	RL22_BACSU	P42080	bacillus su
303	5	3.7	55	1	ATPB_STRPU	P15997	strongyloce	376	5	3.7	113	1	RL24_RICPR	O9zcr6	rickettsia
304	5	3.7	55	1	ATPG_METMA	Q60189	methanosarc	377	5	3.7	113	1	YR7C_ECOLI	P21317	escherichia
305	5	3.7	60	1	RL30_TRETH	P74909	thermus aqu	378	5	3.7	114	1	PFDD_SCHPO	O9utc9	schizosacch
306	5	3.7	62	1	Y205_METJA	Q60262	methanococc	379	5	3.7	114	1	VG40_BPT4	P17171	bacterioph
307	5	3.7	63	1	Y149_HAEIN	P43953	haemophilus	380	5	3.7	115	1	ANFC_SCYCA	P23259	scylliorhinu
308	5	3.7	65	1	YWBE_BACSU	P39588	bacillus su	381	5	3.7	115	1	ANFC_TRISC	P55208	triakis scy
309	5	3.7	68	1	AT19_YEAST	P81451	saccharomyc	382	5	3.7	115	1	NU3M_HUMAN	P03897	homo sapien
310	5	3.7	69	1	NS2C_HUMAN	Q14961	homo sapien	383	5	3.7	115	1	YSCM_YEREN	Q01254	yersinia en
311	5	3.7	69	1	RL29_LACLA	O9cdx0	lactococcus	384	5	3.7	115	1	YSCM_YERPE	Q00930	yersinia pe
312	5	3.7	69	1	Y132_TREPA	O83168	treponema p	385	5	3.7	116	1	PFDB_ARCFU	O29115	archaeoglob
313	5	3.7	70	1	UBIL_CAEBR	Q07371	caenorhabdi	386	5	3.7	116	1	Y125_METJA	O57589	methanococc
314	5	3.7	70	1	UBIL_CAEEL	P07372	caenorhabdi	387	5	3.7	117	1	PT25_STYPL	P28217	styela plic
315	5	3.7	71	1	BD02_MOUSE	Q82020	mus musculu	388	5	3.7	117	1	RK20_ASTLO	P34769	astasia lon
316	5	3.7	73	1	GP60_BPSPI	O48414	bacterioph	389	5	3.7	117	1	VATG_MANSE	O25532	manduca sex
317	5	3.7	73	1	YAUE_SCHPO	Q10167	schizosacch	390	5	3.7	118	1	NU3M_MARPO	P26847	marchantia
318	5	3.7	73	1	YOF6_TTVL	P19281	thermoprote	391	5	3.7	118	1	NU3M_OENBE	P18630	oenothera b
319	5	3.7	74	1	BRZF_RANES	P40842	rana esculu	392	5	3.7	119	1	EYAS_CHICK	Q9y999	gallus gall
320	5	3.7	75	1	CSRA_BACHD	Q9K6V8	bacillus ha	393	5	3.7	119	1	HIS3_RHOSH	Q53198	rhodobacter
321	5	3.7	76	1	ACP_LEUMU	P80920	leucothrix	394	5	3.7	119	1	Y128_SYNP6	P05677	synechococc
322	5	3.7	76	1	NIKM_HUMAN	O43677	homo sapien	395	5	3.7	119	1	Y459_ANASP	P58574	anabaena sp
323	5	3.7	76	1	YS24_BORBU	P70845	borrelia bu	396	5	3.7	119	1	Y459_ANAVA	P29711	anabaena va
324	5	3.7	82	1	Y235_METJA	O57687	methanococc	397	5	3.7	119	1	YVAE_BACSU	O32227	bacillus su
325	5	3.7	83	1	CYC6_PAVLU	P00107	pavlova lut	398	5	3.7	120	1	Y069_ARCFU	O30167	archaeoglob

399 1 YDHD_HAEIN 1 120 3.7 5 P45085 haemophilus 472 149 1 CCAA_ANAPL 1 149 3.7 5 012984 anas platyr
400 1 KVA0_HUMAN 1 121 3.7 5 P06312 homo sapien 473 149 1 CCAA_COLL1 1 149 3.7 5 012988 columba liv
401 1 YR47_MOUSE 1 121 3.7 5 Q922d0 mus musculu 474 149 1 CCAA_EUDEL 1 149 3.7 5 090497 eudromia el
402 1 YG47_YEAST 1 121 3.7 5 P53302 saccharomyc 475 149 1 CCAA_TRASC 1 149 3.7 5 091517 trachenys s
403 1 YH10_AQUAE 1 121 3.7 5 Q06536 aquifex aeo 476 149 1 UREE_LACFE 1 149 3.7 5 09x525 lactobacill
404 1 YM10_YEAST 1 122 3.7 5 Q03880 saccharomyc 477 149 1 YZ73_CAEEL 1 149 3.7 5 019297 caenorhabd
405 1 YAS4_MYCPN 1 123 3.7 5 P75060 mycoplasma 478 150 1 FLGC_BACSU 1 149 3.7 5 024501 bacillus su
406 1 YL34_AQUAE 1 123 3.7 5 P67892 aquifex aeo 479 150 1 RNK6_AOTTR 1 150 3.7 5 046528 aotus trivi
407 1 ACP8_ECOLI 1 125 3.7 5 P24224 escherichia 480 150 1 RNK6_CERAE 1 150 3.7 5 046534 cercopithec
408 1 GDF6_MOUSE 1 125 3.7 5 P43028 mus musculu 481 150 1 RNK6_GORGO 1 150 3.7 5 046532 gorilla gor
409 1 RL26_SCHPO 1 126 3.7 5 P78946 schizosacch 482 150 1 RNK6_HUMAN 1 150 3.7 5 093091 homo sapien
410 1 RNK6_PIG 1 126 3.7 5 P81649 sus scrofa 483 150 1 RNK6_MACMU 1 150 3.7 5 046533 macaca mula
411 1 VEGG_RAT 1 126 3.7 5 Q03757 rattus norv 484 150 1 RNK6_PANTR 1 150 3.7 5 046525 pan troglod
412 1 RS12_THEMEA 1 127 3.7 5 Q9x1j3 thermotoga 485 150 1 RNK6_PAPHA 1 150 3.7 5 046527 papio hamad
413 1 UR2_RANRI 1 127 3.7 5 P33715 rana ridibu 486 150 1 RNK6_PONPY 1 150 3.7 5 046526 pongo pygma
414 1 RT11_PROWI 1 128 3.7 5 P46746 prototheca 487 150 1 RNK6_SAGOE 1 150 3.7 5 046530 saquinus oe
415 1 Y192_RICPR 1 128 3.7 5 Q92dx2 rickettsia 488 150 1 RNK6_SALSC 1 150 3.7 5 046529 salmirei sei
416 1 RS1A_HUMAN 1 129 3.7 5 P39027 homo sapien 489 152 1 Y16D_BT4 1 152 3.7 5 P22317 bacterioph
417 1 UREA_SOYBN 1 129 3.7 5 P08298 glycine max 490 154 1 HMEN_TRIGR 1 154 3.7 5 P09532 tripneustes
418 1 BL_TENMO 1 130 3.7 5 Q27017 tenebrio mo 491 154 1 NT3_CEREL 1 154 3.7 5 095150 cervus elap
419 1 RS17_DROME 1 130 3.7 5 P17704 drosophila 492 155 1 PBP3_DROME 1 155 3.7 5 P54193 drosophila
420 1 RS8_METVA 1 130 3.7 5 P14038 methanococc 493 155 1 ITRF_MAIZE 1 155 3.7 5 P01088 zea mays (m
421 1 VG75_HSVB 1 130 3.7 5 P28985 equine herp 494 155 1 NUDH_HELPY 1 155 3.7 5 025826 helicobact
422 1 FABB_MOUSE 1 131 3.7 5 P51880 mus musculu 495 155 1 RP86_YEAST 1 155 3.7 5 020435 saccharomyc
423 1 FABB_RAT 1 131 3.7 5 P55051 rattus norv 496 156 1 CCMK_PSEFL 1 156 3.7 5 P52226 pseudomonas
424 1 LY6E_HUMAN 1 131 3.7 5 Q16553 homo sapien 497 157 1 FRI_LISIN 1 157 3.7 5 P08725 listeria in
425 1 SODN_STRCO 1 131 3.7 5 P80735 streptomyce 498 157 1 COAT_SPMV 1 157 3.7 5 086993 satellite p
426 1 SODN_STRPO 1 131 3.7 5 Q9p7j6 schizosacch 499 157 1 HES2_RAT 1 157 3.7 5 088305 satellite s
427 1 R17B_SCHPO 1 132 3.7 5 O08716 mus musculu 500 157 1 NUDH_HELPY 1 157 3.7 5 P35429 rattus norv
428 1 TLBP_MOUSE 1 132 3.7 5 P55051 rattus norv 501 157 1 PR04_LYCES 1 157 3.7 5 092jz8 helicobact
429 1 TLBP_RAT 1 132 3.7 5 P06313 homo sapien 502 159 1 PR06_LYCES 1 159 3.7 5 004108 lycopersico
430 1 KVA0_HUMAN 1 133 3.7 5 Q9x49 sulfolobus 503 159 1 Y758_METJA 1 159 3.7 5 P04284 lycopersico
431 1 NIKR_SULSO 1 133 3.7 5 P38208 saccharomyc 504 159 1 RNKD_PONPY 1 159 3.7 5 Q58168 methanococc
432 1 POP8_YEAST 1 133 3.7 5 Q11093 caenorhabd 505 161 1 RPO8_VACCV 1 161 3.7 5 P47784 pongo pygma
433 1 YW23_CAEEL 1 133 3.7 5 Q96870 blomia trop 506 161 1 RPO8_VACCV 1 161 3.7 5 P21034 vaccinia vi
434 1 ALL5_BLOTA 1 134 3.7 5 P05503 rattus norv 507 163 1 RPO8_VACCV 1 163 3.7 5 P04310 vaccinia vi
435 1 CYB_DRYNI 1 134 3.7 5 O27797 methanobact 508 163 1 RPO8_VACCV 1 163 3.7 5 P33058 variola vir
436 1 CYB_MUSAV 1 134 3.7 5 P92651 muscardinus 509 163 1 YEP7_YEAST 1 163 3.7 5 P40043 saccharomyc
437 1 CYB_PITSV 1 134 3.7 5 O78761 pitymys sub 510 163 1 YB94_SCHPO 1 163 3.7 5 043003 schizosacch
438 1 KVA0_HUMAN 1 134 3.7 5 P06314 homo sapien 511 163 1 DSBI_PSEAE 1 163 3.7 5 P21482 pseudomonas
439 1 NUOA_BUCAI 1 134 3.7 5 P57252 buchnera ap 512 163 1 NULM_DROAI 1 163 3.7 5 P51926 drosophila
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441 1 FABB_RAT 1 135 3.7 5 P55053 rattus norv 514 163 1 NULM_DROGU 1 163 3.7 5 P51931 drosophila
442 1 IF2B_METH 1 135 3.7 5 O27797 methanobact 515 163 1 NULM_DROMD 1 163 3.7 5 P51932 drosophila
443 1 YGHC_ECOLI 1 136 3.7 5 Q46835 escherichia 516 163 1 NULM_DROMI 1 163 3.7 5 P51933 drosophila
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446 1 Y337_MYCGE 1 138 3.7 5 P47579 mycoplasma 519 163 1 PBP1_ANTPE 1 163 3.7 5 P51933 drosophila
447 1 YJCT_YEAST 1 138 3.7 5 P47063 saccharomyc 520 163 1 YAG5_SCHPO 1 163 3.7 5 P20797 antherea p
448 1 YJGD_ECOLI 1 138 3.7 5 P37163 escherichia 521 163 1 YG31_AQUAE 1 163 3.7 5 P14371 fowlpox vir
449 1 YJGD_SALTY 1 138 3.7 5 Q08019 salmonella 522 164 1 EBSC_ENTFA 1 164 3.7 5 Q09869 schizosacch
450 1 YMBT_YEAST 1 138 3.7 5 Q03554 saccharomyc 523 164 1 PTSN_HAEIN 1 164 3.7 5 067553 aquifex aeo
451 1 BIR5_MOUSE 1 140 3.7 5 Q07020 mus musculu 524 164 1 VAT_FWVD 1 164 3.7 5 P36922 enterococcu
452 1 ZG49_XENLA 1 140 3.7 5 P18724 xenopus lae 525 164 1 YIF7_YEAST 1 164 3.7 5 P45072 haemophilus
453 1 BIR5_HUMAN 1 140 3.7 5 Q15392 homo sapien 526 164 1 YP98_MYCTU 1 164 3.7 5 P09521 figwort mos
454 1 BIR5_RAT 1 142 3.7 5 Q9jhy7 rattus norv 527 165 1 LKTC_PASSP 1 165 3.7 5 Q0188 saccharomyc
455 1 Y4K0_RHISN 1 142 3.7 5 P55535 rhizobium s 528 165 1 RS5_CHLPN 1 165 3.7 5 Q50623 mycobacteri
456 1 Y1J2_MOUSE 1 143 3.7 5 Q91l89 mus musculu 529 165 1 Y447_MYCGA 1 165 3.7 5 P55124 pasteurella
457 1 COPE_MOUSE 1 143 3.7 5 P13779 escherichia 530 165 1 YU10_BORBU 1 165 3.7 5 P79183 macaca fusc
458 1 MERR_PSEAE 1 144 3.7 5 P06688 pseudomonas 531 165 1 ARGN_MYCLE 1 165 3.7 5 Q927s3 chlamydia p
459 1 NAPA_HELPY 1 144 3.7 5 P43313 helicobacte 532 167 1 FTN_HELPY 1 167 3.7 5 P53660 mycoplasma
460 1 Y250_STAAM 1 144 3.7 5 P52080 staphylococ 533 167 1 LKCB_PASHA 1 167 3.7 5 P53660 mycoplasma
461 1 Y454_AQUAE 1 145 3.7 5 Q66611 aquifex aeo 534 167 1 LKCB_PASHA 1 167 3.7 5 P55121 pasteurella
462 1 GCSH_AERPE 1 147 3.7 5 Q9ydg2 aeropyrum p 535 167 1 LKCB_PASHA 1 167 3.7 5 P55121 pasteurella
463 1 RL15_LACLA 1 147 3.7 5 P58121 lactococcus 536 167 1 NUBM_MXAGL 1 167 3.7 5 P08408 escherichia
464 1 YFJ5_ECOLI 1 147 3.7 5 Q52982 escherichia 537 167 1 PAFP_ECOLI 1 167 3.7 5 P08408 escherichia
465 1 YFJ5_ECOLI 1 147 3.7 5 Q11469 bacillus su 538 167 1 PRSF_ECOLI 1 167 3.7 5 P21187 methanobact
466 1 YSMA_BACSU 1 147 3.7 5 Q9uyi4 pyrococcus 539 168 1 ILVH_METTH 1 168 3.7 5 027492 methanobact
467 1 PFDA_PVRAB 1 148 3.7 5 O58263 pyrococcus 540 168 1 MBP_RABIT 1 168 3.7 5 P25274 cryotolagus
468 1 PFDA_PVRHO 1 148 3.7 5 P03199 epstein-bar 541 168 1 NUBM_RABIT 1 168 3.7 5 P41315 didelphis m
469 1 YLL2_EBV 1 148 3.7 5 Q07285 epstein-bar 542 168 1 TCTP_SCHPO 1 168 3.7 5 P01344 schizosacch
470 1 YLL2_EBV 1 148 3.7 5 Q08104 bovine herp 543 168 1 TCTP_SCHPO 1 168 3.7 5 P41315 didelphis m
471 1 YOR1_HSVBS 1 148 3.7 5 Q08104 bovine herp 544 170 1 ARGR_MYCTU 1 170 3.7 5 P94992 mycobacteri

012984 anas platyr
012988 columba liv
090497 eudromia el
091517 trachenys s
09x525 lactobacill
019297 caenorhabd
024501 bacillus su
046528 aotus trivi
046534 cercopithec
046532 gorilla gor
093091 homo sapien
046533 macaca mula
046525 pan troglod
046527 papio hamad
046526 pongo pygma
046530 saquinus oe
046529 salmirei sei
P22317 bacterioph
P09532 tripneustes
095150 cervus elap
P54193 drosophila
P01088 zea mays (m
025826 helicobact
020435 saccharomyc
P52226 pseudomonas
P08725 listeria in
086993 satellite p
088305 satellite s
P35429 rattus norv
092jz8 helicobact
004108 lycopersico
P04284 lycopersico
Q58168 methanococc
P47784 pongo pygma
P21034 vaccinia vi
P04310 vaccinia vi
P33058 variola vir
P40043 saccharomyc
043003 schizosacch
P21482 pseudomonas
P51926 drosophila
P51927 drosophila
P51931 drosophila
P51932 drosophila
P51933 drosophila
P51933 drosophila
Q17077 antherea p
P20797 antherea p
P14371 fowlpox vir
P3371 vaccinia vir
Q09869 schizosacch
067553 aquifex aeo
P36922 enterococcu
P45072 haemophilus
P09521 figwort mos
Q0188 saccharomyc
Q50623 mycobacteri
P55124 pasteurella
P79183 macaca fusc
Q927s3 chlamydia p
P53660 mycoplasma
P53660 mycoplasma
O50843 borrelia bu
P57992 mycobacteri
Q92111 helicobacte
P52093 helicobacte
P16533 pasteurella
P55121 pasteurella
Q9g2w7 myxine glut
P08408 escherichia
P21187 methanobact
027492 methanobact
P25274 cryotolagus
P41315 didelphis m
P01344 schizosacch
P94992 mycobacteri

545	5	3.7	170	1	CRAA_BRAVA	P02487	bradypus va	618	5	3.7	178	1	Y561_CHLPN	O92722	chlamydia p
546	5	3.7	170	1	CRAA_CHOHO	P02486	choleopus h	619	5	3.7	178	1	YC96_HAEIN	O57519	haemophilus
547	5	3.7	170	1	CRAA_TAMME	P02485	tamandua me	620	5	3.7	179	1	14P_BOVIN	O18883	bos taurus
548	5	3.7	170	1	DEF_PASMU	P57948	pasteurella	621	5	3.7	179	1	GRPE_LACIA	O9C9V9	lactococcus
549	5	3.7	171	1	NSG2_MOUSE	P47759	mus musculus	622	5	3.7	179	1	GRPE_LACLC	P42369	lactococcus
550	5	3.7	171	1	SDG2_AQUAE	O66602	aquifex aeo	623	5	3.7	179	1	YC61_SYNY3	P73801	synechocyst
551	5	3.7	172	1	CRAA_MACMU	P02488	macaca mula	624	5	3.7	180	1	ARF1_CHLRE	P51821	chlamydomon
552	5	3.7	173	1	CRAA_ALLMI	P06904	alligator m	625	5	3.7	180	1	E1BS_ADES7	P06501	simian aden
553	5	3.7	173	1	CRAA_ARTJA	P02482	artibeus ja	626	5	3.7	180	1	RGSS_HUMAN	P57771	homo sapien
554	5	3.7	173	1	CRAA_ASTFA	O93591	astyanax fa	627	5	3.7	180	1	RGSS_RAT	P49804	rattus norv
555	5	3.7	173	1	CRAA_BALAC	P02474	balaeopter	628	5	3.7	180	1	YJ01_YEAST	P46998	saccharomyc
556	5	3.7	173	1	CRAA_BOVIN	P02470	bos taurus	629	5	3.7	181	1	EU02_CHLPS	P46611	chlamydia p
557	5	3.7	173	1	CRAA_CAMDR	P02472	canis famli	630	5	3.7	181	1	VM22_YEAST	P38784	saccharomyc
558	5	3.7	173	1	CRAA_CANPA	P02473	canis famli	631	5	3.7	182	1	EU01_CHLPS	Q06566	chlamydia p
559	5	3.7	173	1	CRAA_CAVPO	P02491	cavia porce	632	5	3.7	182	1	RELX_HORSE	P29169	equus cabal
560	5	3.7	173	1	CRAA_CERSI	P02479	ceratotheri	633	5	3.7	182	1	YGFA_ECOLI	P09160	escherichia
561	5	3.7	173	1	CRAA_CHICK	P02504	gallus gall	634	5	3.7	183	1	REGA_RHOSU	O82868	rhodovulum
562	5	3.7	173	1	CRAA_DIDMA	P02503	didelphis m	635	5	3.7	183	1	RRF_MYCGE	P47673	mycoplasma
563	5	3.7	173	1	CRAA_EULFU	P02494	eulemur ful	636	5	3.7	183	1	UBC6_ARATH	P42750	arabidopsis
564	5	3.7	173	1	CRAA_GIRCA	P02471	giraffa cam	637	5	3.7	184	1	REGA_RHOC	P42508	rhodobacter
565	5	3.7	173	1	CRAA_HORSE	P02478	equus cabal	638	5	3.7	184	1	REGA_RHOSH	Q53228	rhodobacter
566	5	3.7	173	1	CRAA_HUMAN	P02489	homo sapien	639	5	3.7	185	1	LEC_VICVI	P56625	vicia villo
567	5	3.7	173	1	CRAA_LOXAF	P02498	loxodonta a	640	5	3.7	185	1	RELX_MOUSE	P47932	mus musculu
568	5	3.7	173	1	CRAA_MACRU	P02502	macropus ru	641	5	3.7	185	1	RRF_LACLA	Q9CE39	lactococcus
569	5	3.7	173	1	CRAA_MANJA	P02484	manis javan	642	5	3.7	185	1	US10_HCMVA	P09728	human cytom
570	5	3.7	173	1	CRAA_MOUSE	P02490	mus musculu	643	5	3.7	185	1	YK46_AQUAE	O67433	aquifex aeo
571	5	3.7	173	1	CRAA_MUSVI	P02483	mustela vis	644	5	3.7	185	1	YXAK_BACSU	P42110	bacillus su
572	5	3.7	173	1	CRAA_OCHPR	P02492	ochotona pr	645	5	3.7	186	1	AFOK_BACSU	P37944	bacillus su
573	5	3.7	173	1	CRAA_ORYAF	P02501	oryctolagus	646	5	3.7	187	1	YXND_BACSU	P40736	bacillus su
574	5	3.7	173	1	CRAA_PERPO	P02495	perodicticu	647	5	3.7	188	1	RER1_YEAST	P25560	saccharomyc
575	5	3.7	173	1	CRAA_PHOPH	P02475	phocoenoid	648	5	3.7	188	1	RIMM_DEIRA	Q9RSW1	deinococcus
576	5	3.7	173	1	CRAA_PIG	P02477	sus scrofa	649	5	3.7	189	1	INAT_HUMAN	P01567	homo sapien
577	5	3.7	173	1	CRAA_PROCA	P02499	procavia ca	650	5	3.7	189	1	INAF_HUMAN	P05015	homo sapien
578	5	3.7	173	1	CRAA_PTEPO	P82531	pteropus po	651	5	3.7	189	1	PAAD_NEIMA	Q9JW78	neisseria m
579	5	3.7	173	1	CRAA_RABIT	P02493	oryctolagus	652	5	3.7	189	1	PAAD_NEIMB	Q9JXP4	neisseria m
580	5	3.7	173	1	CRAA_RHEAM	P02505	rhea americ	653	5	3.7	189	1	YF26_CAEEL	O16207	caenorhabdi
581	5	3.7	173	1	CRAA_SPAEH	Q84211	spalax leuc	654	5	3.7	189	1	YIWC_CAEEL	Q01901	caenorhabdi
582	5	3.7	173	1	CRAA_TAPIN	P02476	tupia ind	655	5	3.7	189	1	PTH_YEAST	P38876	saccharomyc
583	5	3.7	173	1	CRAA_TUPTU	P02506	tupia nambis	656	5	3.7	190	1	SOMA_PAROL	P09537	paralichthy
584	5	3.7	173	1	CRAA_URSUR	P02480	ursus ursin	657	5	3.7	191	1	KITH_STRGC	P47848	streptococc
585	5	3.7	173	1	CRAA_ZALCA	P02481	zalophus ca	658	5	3.7	191	1	Y096_HAEIN	P43940	haemophilus
586	5	3.7	173	1	CRAA_MOUSE	P04345	mus musculu	659	5	3.7	191	1	Y777_METJA	Q58187	methanococc
587	5	3.7	173	1	CRGA_RAT	P10065	rattus norv	660	5	3.7	191	1	YGCP_ECOLI	Q46906	escherichia
588	5	3.7	173	1	CRGC_MOUSE	O61597	mus musculu	661	5	3.7	192	1	EPO_MOUSE	P07321	mus musculu
589	5	3.7	173	1	CRGC_RAT	P02529	rattus norv	662	5	3.7	192	1	EPO_RAT	P29676	rattus norv
590	5	3.7	173	1	OMPH_CHLMU	Q9PK12	chlamydia m	663	5	3.7	192	1	INAI_RAT	P05011	rattus norv
591	5	3.7	173	1	PSAL_MASLA	Q31126	mastigoclad	664	5	3.7	193	1	HS27_CHICK	Q00649	gallus gall
592	5	3.7	174	1	CRGB_MOUSE	P04344	mus musculu	665	5	3.7	193	1	PGC1_PIG	Q95250	sus scrofa
593	5	3.7	174	1	CRGB_MOUSE	P10066	rattus norv	666	5	3.7	193	1	VIN3_BPT4	P13302	bacterioph
594	5	3.7	174	1	CRGB_RAT	P00350	methanobact	667	5	3.7	194	1	HSBY_HUMAN	O43416	homo sapien
595	5	3.7	174	1	GRPE_METH	O46250	drosophila	668	5	3.7	195	1	Y904_METJA	O58314	methanococc
596	5	3.7	174	1	HUNB_DROMU	P70102	crietellus	669	5	3.7	196	1	ADEN_ADEBA	O71070	bovine aden
597	5	3.7	174	1	MCA3_CRIGR	O43324	homo sapien	670	5	3.7	196	1	ADEN_ADEBA	P02497	mesocricetu
598	5	3.7	174	1	MCA3_CRIGR	P06019	bacterioph	671	5	3.7	196	1	CRA2_MESAU	P24622	mus musculu
599	5	3.7	174	1	RFC1_LPMU	Q58320	methanococc	672	5	3.7	196	1	CRA2_MOUSE	P24623	rattus norv
600	5	3.7	175	1	Y910_METJA	P02510	bos taurus	673	5	3.7	196	1	CRA2_RAT	P15990	spalax leuc
601	5	3.7	175	1	CRAB_BOVIN	P02511	homo sapien	674	5	3.7	196	1	HTGA_ECOLI	P28697	escherichia
602	5	3.7	175	1	CRAB_HUMAN	P05811	mesocricetu	675	5	3.7	196	1	SFR2_CABEL	Q09511	caenorhabdi
603	5	3.7	175	1	CRAB_MESAU	P23927	mus musculu	676	5	3.7	196	1	SOMA_FUGRU	O12980	fugu rubrip
604	5	3.7	175	1	CRAB_MOUSE	P41316	oryctolagus	677	5	3.7	196	1	Y208_MYCPN	P75486	mycoplasma
605	5	3.7	175	1	CRAB_RABIT	P23928	rattus norv	678	5	3.7	196	1	YAAE_BACSU	P37528	bacillus su
606	5	3.7	175	1	MRPA_PROMI	Q30011	proteus mir	679	5	3.7	196	1	YSP2_LEPIN	P24845	leptospira
607	5	3.7	175	1	Y002_ARCFU	O30233	archaeoglob	680	5	3.7	197	1	ZG8_XENLA	P18737	xenopus lae
608	5	3.7	175	1	Y433_METJA	Q57875	methanococc	681	5	3.7	197	1	DEM1_PHYSA	P05422	phyllomedus
609	5	3.7	176	1	YHCB_PLEBA	Q36644	plecotus ra	682	5	3.7	197	1	R16C_SCHPO	O43004	schizosacch
610	5	3.7	176	1	YHCB_BACSU	P02509	bacillus su	683	5	3.7	197	1	RUVA_CLOHI	O92N16	clostridium
611	5	3.7	177	1	CRAA_SQUAC	O18999	equus cabal	684	5	3.7	197	1	VS11_ROTTH	P04516	human rotav
612	5	3.7	177	1	ILIX_HORSE	P26890	oryctolagus	685	5	3.7	197	1	VS11_ROTTP5	P19715	porcine rot
613	5	3.7	177	1	ILIX_RABIT	Q44679	corynebacte	686	5	3.7	197	1	VS11_ROTTP5	Q03054	porcine rot
614	5	3.7	177	1	PUR6_CORAM	Q03339	rinderpest	687	5	3.7	198	1	DEM2_PHYSA	P05421	phyllomedus
615	5	3.7	177	1	VNSC_RINDR	Q43339	rinderpest	688	5	3.7	198	1	GRPE_CAUCR	P48195	caulobacter
616	5	3.7	178	1	ISPF_CHLMU	O9PJV8	chlamydia m	689	5	3.7	198	1	GRPE_HAEIN	P43732	haemophilus
617	5	3.7	178	1	PYRE_ARCFU	O28533	archaeoglob	690	5	3.7	198	1	NORE_VIBAL	Q56599	vibrio algi

545	5	3.7	170	1	CRAA_BRAVA	P02487	bradypus va	618	5	3.7	178	1	Y561_CHLPN	O92722	chlamydia p
546	5	3.7	170	1	CRAA_CHOHO	P02486	choleopus h	619	5	3.7	178	1	YC96_HAEIN	O57519	haemophilus
547	5	3.7	170	1	CRAA_TAMME	P02485	tamandua me	620	5	3.7	179	1	14P_BOVIN	O18883	bos taurus
548	5	3.7	170	1	DEF_PASMU	P57948	pasteurella	621	5	3.7	179	1	GRPE_LACIA	O9C9V9	lactococcus
549	5	3.7	171	1	NSG2_MOUSE	P47759	mus musculus	622	5	3.7	179	1	GRPE_LACLC	P42369	lactococcus
550	5	3.7	171	1	SDG2_AQUAE	O66602	aquifex aeo	623	5	3.7	179	1	YC61_SYNY3	P73801	synechocyst
551	5	3.7	172	1	CRAA_MACMU	P02488	macaca mula	624	5	3.7	180	1	ARF1_CHLRE	P51821	chlamydomon
552	5	3.7	173	1	CRAA_ALLMI	P06904	alligator m	625	5	3.7	180	1	E1BS_ADES7	P06501	simian aden
553	5	3.7	173	1	CRAA_ARTJA	P02482	artibeus ja	626	5	3.7	180	1	RGSS_HUMAN	P57771	homo sapien
554	5	3.7	173	1	CRAA_ASTFA	O93591	astyanax fa	627	5	3.7	180	1	RGSS_RAT	P49804	rattus norv
555	5	3.7	173	1	CRAA_BALAC	P02474	balaeopter	628	5	3.7	180	1	YJ01_YEAST	P46998	saccharomyc
556	5	3.7	173	1	CRAA_BOVIN	P02470	bos taurus	629	5	3.7	181	1	EU02_CHLPS	P46611	chlamydia p
557	5	3.7	173	1	CRAA_CAMDR	P02472	canis famli	630	5	3.7	181	1	VM22_YEAST	P38784	saccharomyc
558	5	3.7	173	1	CRAA_CANPA	P02473	canis famli	631	5	3.7	182	1	EU01_CHLPS	Q06566	chlamydia p
559	5	3.7	173	1	CRAA_CAVPO	P02491	cavia porce	632	5	3.7	182	1	RELX_HORSE	P29169	equus cabal
560	5	3.7	173	1	CRAA_CERSI	P02479	ceratotheri	633	5	3.7	182	1	YGFA_ECOLI	P09160	escherichia
561	5	3.7	173	1	CRAA_CHICK	P02504	gallus gall	634	5	3.7	183	1	REGA_RHOSU	O82868	rhodovulum
562	5	3.7	173	1	CRAA_DIDMA	P02503	didelphis m	635	5	3.7	183	1	RRF_MYCGE	P47673	mycoplasma
563	5	3.7	173	1	CRAA_EULFU	P02494</									

691	5	3.7	198	1	NORE_VTBCH	Q9x4q7 vibrio chol	764	5	3.7	210	1	SOMA_SALSA	P10814 salmo salar
692	5	3.7	198	1	NORE_VTBHA	Q9rfv7 vibrio harv	765	5	3.7	210	1	TRAW_ECOLI	P18472 escherichia
693	5	3.7	198	1	PGD_CHICK	O73888 gallus gall	766	5	3.7	210	1	UPP_DEIRA	Q9ru32 deinococcus
694	5	3.7	198	1	VS11_ROTBV	P23046 bovine rota	767	5	3.7	211	1	SERB_METJA	Q58989 methanococc
695	5	3.7	199	1	EFTS_GALSU	P35019 gaidieria s	768	5	3.7	211	1	YY21_MYCTU	Q50707 mycobacteri
696	5	3.7	199	1	EQST_ACTEQ	P81439 actinia equ	769	5	3.7	212	1	GS27_HUMAN	Q14653 homo sapien
697	5	3.7	199	1	NUCH_RHOCA	O84971 rhodobacter	770	5	3.7	212	1	GS27_MOUSE	Q35166 mus musculu
698	5	3.7	200	1	RACH_DICDI	Q9dpr7 dictyosteli	771	5	3.7	212	1	GS27_RAT	O35165 rattus norv
699	5	3.7	200	1	SOMA_HETFO	Q9w6r8 heteropneus	772	5	3.7	212	1	RB15_RAT	P35289 rattus norv
700	5	3.7	200	1	SOMA_ICTPU	P34745 ictalurus p	773	5	3.7	212	1	SN25_DROME	P36975 drosophila
701	5	3.7	200	1	SOMA_PANPG	P29970 pangasius p	774	5	3.7	212	1	SODM_HARDU	O30826 haemophilus
702	5	3.7	200	1	Y933_HELPJ	Q9zkr8 helicobacte	775	5	3.7	213	1	HS27_CRILLO	P15991 cricetulus
703	5	3.7	200	1	Y933_HELPJ	O25587 helicobacte	776	5	3.7	213	1	SOMA_BUFMA	O73849 bufo marinu
704	5	3.7	201	1	RECR_TREPA	O83969 treponema p	777	5	3.7	213	1	YMO6_YEAST	Q44477 saccharomyc
705	5	3.7	201	1	VP24_BDV	P26668 borna disea	778	5	3.7	214	1	RNH2_CHLPN	Q92962 chlamydia p
706	5	3.7	201	1	YAMC_SCHPO	Q10186 schizosacch	779	5	3.7	214	1	TAL_STRPY	O99y12 streptococc
707	5	3.7	202	1	Y06P_BPT4	P39223 bacterioph	780	5	3.7	214	1	TDX2_SULME	O33665 sulfolobus
708	5	3.7	203	1	CLPP_THEMA	Q9wzif thermotoga	781	5	3.7	214	1	YDL8_SCHPO	P87124 schizosacch
709	5	3.7	203	1	GSTA_RHILE	Q52828 rhizobium l	782	5	3.7	215	1	CYB6_CHLPR	P13347 chlorella p
710	5	3.7	203	1	SOMA_SOLSE	P45643 solea seneg	783	5	3.7	215	1	TDX1_SULME	Q55060 sulfolobus
711	5	3.7	203	1	YC11_AQUAE	O67264 aquifex aeo	784	5	3.7	215	1	VIF_HV2BE	P17858 human immu
712	5	3.7	203	1	YJA4_YEAST	P41544 saccharomyc	785	5	3.7	215	1	VIF_HV2D1	P17757 human immu
713	5	3.7	203	1	YJA4_YEAST	P41544 saccharomyc	786	5	3.7	216	1	KCY_CHLTR	Q9p1u0 chlamydia m
714	5	3.7	204	1	RISA_STRPN	P45273 haemophilus	787	5	3.7	216	1	KCY_CHLTR	O84458 chlamydia t
715	5	3.7	204	1	SOMA_DICLA	O05163 dicentrarch	788	5	3.7	216	1	RSEA_ECOLI	P38106 escherichia
716	5	3.7	204	1	SOMA_MORSA	P48248 morone saxa	789	5	3.7	216	1	YIU4_YEAST	P40576 saccharomyc
717	5	3.7	204	1	SOMA_SEBSC	P87391 sebastes sc	790	5	3.7	216	1	YLA5_AQUAE	O67901 aquifex aeo
718	5	3.7	204	1	SOMA_TRITC	Q98uf6 trichogaste	791	5	3.7	217	1	CRBB_HYDAT	P51985 hydra atten
719	5	3.7	204	1	TNE6_HUMAN	Q95857 homo sapien	792	5	3.7	217	1	RR3_PINTH	P41635 pinus thunb
720	5	3.7	204	1	YC42_ODOSI	P49537 odontella s	793	5	3.7	217	1	YJ77_YEAST	P40857 saccharomyc
721	5	3.7	205	1	FLID_PROMI	P42274 proteus mir	794	5	3.7	218	1	ESM2_DROME	O97177 drosophila
722	5	3.7	205	1	HS27_HUMAN	P04792 homo sapien	795	5	3.7	218	1	LPOT_MYCLE	O9cd47 mycobacteri
723	5	3.7	206	1	FGF4_BOVIN	P48803 bos taurus	796	5	3.7	218	1	RR3_PICAB	O62951 picea abies
724	5	3.7	206	1	HS27_RAT	P42930 rattus norv	797	5	3.7	218	1	RR3_TOBAC	P06357 nicotiana t
725	5	3.7	206	1	PAAD_SYNY3	P72743 synecocyst	798	5	3.7	218	1	VNS3_AHSV1	O64903 african hor
726	5	3.7	206	1	S3AF_BACSU	P42783 bacillus su	799	5	3.7	218	1	VNS3_AHSV2	O64914 african hor
727	5	3.7	206	1	SOMA_PROAN	O73848 protopterus	800	5	3.7	218	1	VNS3_AHSV8	Q64905 african hor
728	5	3.7	207	1	COAE_PSEPG	O69082 pseudomonas	801	5	3.7	218	1	Y522_METJA	Q57942 methanococc
729	5	3.7	207	1	COAE_PSEPU	P36644 pseudomonas	802	5	3.7	219	1	GN1_DROME	O9va10 drosophila
730	5	3.7	207	1	FGFG_HUMAN	O43320 homo sapien	803	5	3.7	220	1	YN17_CAEEL	P34551 caenorhabdi
731	5	3.7	207	1	FGFG_RAT	O54769 rattus norv	804	5	3.7	221	1	CCMB_HAEIN	P45033 haemophilus
732	5	3.7	207	1	GIDB_ECOLI	P17113 escherichia	805	5	3.7	221	1	GCHI_ECOLI	P27511 escherichia
733	5	3.7	207	1	LEXA_STRAU	Q914p1 staphylococ	806	5	3.7	221	1	I12A_BOVIN	P54349 bos taurus
734	5	3.7	207	1	PSMB_PYRHO	O50110 pyrococcus	807	5	3.7	221	1	I12A_CAPHI	O02814 capra hircu
735	5	3.7	207	1	SOMA_LABRO	O9w617 labeo rohlt	808	5	3.7	221	1	I12A_SHEEP	Q9tu27 ovis aries
736	5	3.7	208	1	GRPE_STRAAM	P45553 staphylococ	809	5	3.7	221	1	PGMB_LACLA	P71447 lactococcus
737	5	3.7	208	1	Y935_METJA	Q58345 methanococc	810	5	3.7	221	1	PLL2_MESAU	P14059 mesocricetu
738	5	3.7	209	1	HS27_CANFA	P42929 canis famli	811	5	3.7	221	1	THIE_PASMU	P57930 pasteurella
739	5	3.7	209	1	HS27_MOUSE	P14602 mus musculu	812	5	3.7	221	1	Y700_RICPR	Q9xcm4 rickettsia
740	5	3.7	209	1	SHR3_YEAST	Q02774 saccharomyc	813	5	3.7	222	1	CCGI_RABIT	P19518 oryctolagus
741	5	3.7	209	1	SODE_RICPR	Q9zd15 rickettsia	814	5	3.7	223	1	PHOP_ECOLI	P23836 escherichia
742	5	3.7	209	1	SOMA_ESOLU	P34744 esox lucius	815	5	3.7	223	1	YA00_TREPA	O83965 treponema p
743	5	3.7	209	1	Y331_MYCPN	P75307 mycoplasma	816	5	3.7	224	1	MT04_UREPA	Q9pqm2 ureaplasma
744	5	3.7	209	1	Y622_SULSO	Q9ux16 sulfolobus	817	5	3.7	224	1	PHOP_SALTY	P14146 salmonella
745	5	3.7	210	1	CAT4_ENTAE	P50868 enterobacte	818	5	3.7	225	1	ALKD_PSEPU	P00885 pseudomonas
746	5	3.7	210	1	FGFL_MOUSE	Q9jjn1 mus musculu	819	5	3.7	225	1	EF1B_PIMBR	P93447 pimplinella
747	5	3.7	210	1	OBA5_DROME	P54185 drosophila	820	5	3.7	225	1	GDIT_HUMAN	Q99819 homo sapien
748	5	3.7	210	1	SAS_HUMAN	O12999 homo sapien	821	5	3.7	225	1	GDIT_MOUSE	Q62160 mus musculu
749	5	3.7	210	1	SOM1_CARAU	Q93359 carassius a	822	5	3.7	225	1	Y116_METJA	Q57580 methanococc
750	5	3.7	210	1	SOM1_ONCMY	P09538 oncorhynch	823	5	3.7	225	1	Y638_METJA	O58055 methanococc
751	5	3.7	210	1	SOM1_ONCNE	Q91222 oncorhynch	824	5	3.7	226	1	LPQT_MYCTU	O14530 homo sapien
752	5	3.7	210	1	SOM2_CARAU	O93360 carassius a	825	5	3.7	226	1	XL3A_MOUSE	P96384 mycobacteri
753	5	3.7	210	1	SOM2_ONCMY	P20332 oncorhynch	826	5	3.7	226	1	XL3B_MOUSE	Q60595 mus musculu
754	5	3.7	210	1	SOM2_ONCNE	Q91221 oncorhynch	827	5	3.7	226	1	COX2_SITGR	Q61806 mus musculu
755	5	3.7	210	1	SOMA_CORAU	P45655 coregonus a	828	5	3.7	227	1	HAD1_PSESP	P29879 sitophilus
756	5	3.7	210	1	SOMA_CORLV	O13188 coregonus l	829	5	3.7	227	1	HAD1_PSESP	P24069 pseudomonas
757	5	3.7	210	1	SOMA_CTEID	P20390 ctenopharyn	830	5	3.7	227	1	ID11_SCHPO	Q10132 schizosacch
758	5	3.7	210	1	SOMA_CYPEA	P10298 cyprinus ca	831	5	3.7	227	1	MOBD_THIFE	P22900 thlobacillu
759	5	3.7	210	1	SOMA_MISMI	Q9w6j5 misgurnus m	832	5	3.7	227	1	PIMT_BRARE	Q92047 b proteini
760	5	3.7	210	1	SOMA_ONCKE	P07064 oncorhynch	833	5	3.7	227	1	Y022_BPPI	P51724 bacterioph
761	5	3.7	210	1	SOMA_ONCKI	P10607 oncorhynch	834	5	3.7	228	1	CLCB_BOVIN	Q04975 bos taurus
762	5	3.7	210	1	SOMA_ONCMA	Q9dgg5 oncorhynch	835	5	3.7	228	1	HS70_LEIBR	P27894 leishmania
763	5	3.7	210	1	SOMA_ONCTS	Q07221 oncorhynch	836	5	3.7	228	1	LEP4_KLEPN	P15754 klebsiella

837	5	3.7	228	1	RR2_MESVI	Q9mus8	mesostigma	910	5	3.7	242	1	OMP4_NEIMA	P38367	neisseria m
838	5	3.7	228	1	YM42_CAEEL	P34518	caenorhabdi	911	5	3.7	243	1	COX2_PNECA	P29163	pneumocysti
839	5	3.7	228	1	YTUB_ERWHE	Q47826	erwinia her	912	5	3.7	243	1	FUCR_ECOLI	P11554	escherichia
840	5	3.7	229	1	CENA_SPIOL	Q9m314	spinacia ol	913	5	3.7	243	1	LEC1_ULEEU	P22972	ulex europe
841	5	3.7	229	1	CLCB_HUMAN	P09497	homo sapien	914	5	3.7	244	1	COAT_MSVN	P03569	maize strea
842	5	3.7	229	1	CLCB_RAT	P08082	rattus norv	915	5	3.7	244	1	COAT_MSVN	P06448	maize strea
843	5	3.7	229	1	MODB_HAEIN	P45322	haemophilus	916	5	3.7	244	1	COAT_MSVS	P14986	maize strea
844	5	3.7	229	1	PHOB_ECOLI	P08402	escherichia	917	5	3.7	244	1	RS2_BUCAI	P57325	buchnera ap
845	5	3.7	229	1	PHOB_KLEPN	P45605	klebsiella	918	5	3.7	244	1	SFSA_VIBCH	Q9kuc5	vibrio chol
846	5	3.7	229	1	PHOB_SHIDY	P45607	shigella fl	919	5	3.7	245	1	DNAC_ECOLI	P33929	escherichia
847	5	3.7	229	1	PHOB_SHIFL	P45607	shigella fl	920	5	3.7	245	1	DNAC_ECOLI	P07905	escherichia
848	5	3.7	229	1	VE4_HPV08	P06425	human papil	921	5	3.7	245	1	FLIP_AGRT5	Q44344	agrobacteri
849	5	3.7	229	1	Y544_METJA	Q57964	methanococ	922	5	3.7	245	1	FLIP_RHIME	P37827	rhizobium m
850	5	3.7	230	1	EF1B_BETVU	O81918	beta vulgar	923	5	3.7	245	1	YBPA_BURCE	P37335	burkholderi
851	5	3.7	230	1	VATE_ARATH	Q39258	arabidopsis	924	5	3.7	246	1	GP6D_CHLMU	Q46442	chlamydia m
852	5	3.7	230	1	VATE_CITLI	Q9sew7	citrus limo	925	5	3.7	246	1	MTT1_HUMAN	Q00059	homo sapien
853	5	3.7	230	1	Y4OC_RHISN	P55588	rhizobium s	926	5	3.7	246	1	PHOS_HUMAN	P20941	homo sapien
854	5	3.7	231	1	BIOD_VIBCH	Q9kszi	vibrio chol	927	5	3.7	246	1	PRTP_HSV2	P36385	herpes simp
855	5	3.7	231	1	EF1C_ARATH	P48006	arabidopsis	928	5	3.7	247	1	DB83_HUMAN	P57088	homo sapien
856	5	3.7	231	1	EF1C_ARATH	Q9si20	arabidopsis	929	5	3.7	247	1	DB83_RAT	Q92142	rattus norv
857	5	3.7	231	1	KAD_PRIAR	O24464	prunus arme	930	5	3.7	248	1	COX2_SCHPO	P21534	schizosach
858	5	3.7	231	1	NDK2_ARATH	O64903	arabidopsis	931	5	3.7	248	1	GRAC_MOUSE	P08882	mus musculu
859	5	3.7	231	1	RNC_CHLTR	O84299	chlamydia t	932	5	3.7	248	1	GRAD_MOUSE	P11033	mus musculu
860	5	3.7	231	1	YEAZ_ECOLI	P76256	escherichia	933	5	3.7	248	1	GRAE_MOUSE	P08884	mus musculu
861	5	3.7	232	1	CHSY_MALDO	P30078	malus domes	934	5	3.7	248	1	GRAG_MOUSE	P08883	mus musculu
862	5	3.7	232	1	FL3L_MOUSE	P49772	mus musculu	935	5	3.7	248	1	GRAG_MOUSE	P13366	mus musculu
863	5	3.7	232	1	YDFE_SCHPO	Q10485	schizosacch	936	5	3.7	248	1	NADE_MYCPN	P75216	mycoplasma
864	5	3.7	232	1	YH73_SVNV3	P73623	synchoecyst	937	5	3.7	249	1	CREB_CHLVR	P51984	chlorohydra
865	5	3.7	233	1	DEOD_HELPJ	Q92k38	helicobacte	938	5	3.7	249	1	LEC2_ULEEU	P22973	ulex europe
866	5	3.7	233	1	DEOD_HELPJ	P56463	helicobacte	939	5	3.7	249	1	MOEB_ECOLI	P12822	escherichia
867	5	3.7	233	1	FLPA_AERPE	Q9y9u3	aeropyrum p	940	5	3.7	249	1	MOEB_SALTY	Q56067	salmonella
868	5	3.7	233	1	NDK2_SPIOL	Q01402	spinacia ol	941	5	3.7	249	1	YCIT_ECOLI	P76034	escherichia
869	5	3.7	233	1	RNC_COXBU	P51837	coxiella bu	942	5	3.7	250	1	COX2_NEUCR	P00411	neurospora
870	5	3.7	233	1	SNG4_MOUSE	Q92112	mus musculu	943	5	3.7	250	1	LEC1_LABAL	P23558	laburnum al
871	5	3.7	233	1	YJ08_YEAST	P47006	saccharomyc	944	5	3.7	250	1	RS2_ZYMW0	Q925e7	zymomonas m
872	5	3.7	233	1	YJF5_YEAST	P39541	saccharomyc	945	5	3.7	250	1	YNCW_BACSU	Q31803	bacillus su
873	5	3.7	234	1	CYB_LEPEU	O47561	lepus europ	946	5	3.7	251	1	1433_TOBAC	Q41246	nicotiana t
874	5	3.7	234	1	TRMD_RICPR	Q9ze37	rickettsia	947	5	3.7	251	1	ARC3_CBDP	P15879	clostridium
875	5	3.7	235	1	EFU7_PLEBO	P50066	plectonema	948	5	3.7	251	1	SAST_ANAPL	P00633	anas platyr
876	5	3.7	235	1	GAMT_RAT	P10868	rattus norv	949	5	3.7	251	1	YBYM_BACSU	P37491	bacillus su
877	5	3.7	235	1	ICLN_CANFA	P35521	canis famil	950	5	3.7	251	1	COX2_EMENI	P13588	emerella
878	5	3.7	235	1	REP3_STAUA	P50061	staphylococ	951	5	3.7	252	1	RS2_PASMU	P57982	pasteurella
879	5	3.7	235	1	RR2_GUITH	O78482	guillardia	952	5	3.7	252	1	Y035_UREPA	Q9orb0	ureaplasma
880	5	3.7	236	1	CYB_ANGRO	P34861	anguilla ro	953	5	3.7	253	1	3BHD_COMTE	P19871	comamonas t
881	5	3.7	236	1	ICLN_MOUSE	Q61189	mus musculu	954	5	3.7	253	1	SURE_ECOLI	P36664	escherichia
882	5	3.7	236	1	ICLN_RAT	Q04753	rattus norv	955	5	3.7	253	1	TPM1_HYDAT	P39921	hydra atten
883	5	3.7	236	1	OMP3_NEIGO	P07050	neisseria g	956	5	3.7	253	1	UPPS_CHLMU	Q9piu2	chlamydia m
884	5	3.7	236	1	PUR7_LACLC	O68830	lactococcus	957	5	3.7	253	1	UPPS_CHLTR	O84456	chlamydia t
885	5	3.7	236	1	PUR7_LACLC	Q9r7d5	lactococcus	958	5	3.7	253	1	Y4MP_RHISN	P55575	rhizobium s
886	5	3.7	236	1	STX8_HUMAN	Q9unk0	homo sapien	959	5	3.7	254	1	VMAT_TFTV	P31620	turkey rhin
887	5	3.7	236	1	STX8_RAT	Q922q7	rattus norv	960	5	3.7	255	1	AMPW_TREPA	O83814	treponema p
888	5	3.7	236	1	YEW3_SCHPO	O41411	schizosacch	961	5	3.7	255	1	CBPM_STRAL	P00733	streptomyce
889	5	3.7	236	1	YG99_CLOAB	P33664	clostridium	962	5	3.7	255	1	GRPS_MYXXA	P95333	myxococcus
890	5	3.7	237	1	APHA_SALTY	O08430	salmonella	963	5	3.7	255	1	MYF5_XENLA	P24700	xenopus lae
891	5	3.7	237	1	APHA_SALTY	P58683	salmonella	964	5	3.7	255	1	VGLE_HSVE4	P18345	equine herp
892	5	3.7	237	1	COX2_TRIRU	Q01556	trichophyto	965	5	3.7	256	1	ADH_ZAPTU	P51552	zapionus t
893	5	3.7	237	1	ICLN_HUMAN	P54105	homo sapien	966	5	3.7	256	1	GRST_BACBR	P14686	bacillus br
894	5	3.7	237	1	VATE_GOSHI	O23948	gossypium h	967	5	3.7	256	1	KPTA_AERPE	Q9yfp5	aeropyrum p
895	5	3.7	237	1	YC28_FORPU	P51342	porphyra pu	968	5	3.7	257	1	YGIE_ECOLI	P24198	escherichia
896	5	3.7	237	1	YC53_CYACA	O19887	cyanidium c	969	5	3.7	258	1	DHG2_BACSU	P80869	bacillus su
897	5	3.7	237	1	YHY5_YEAST	P38872	saccharomyc	970	5	3.7	258	1	HYI_ECOLI	P30147	escherichia
898	5	3.7	237	1	YMU5_STRCM	Q05071	streptomyce	971	5	3.7	259	1	DJBA_MOUSE	Q9gyi5	mus musculu
899	5	3.7	237	1	YNAF_BACSU	P25149	bacillus su	972	5	3.7	259	1	MOB2_YEAST	P43563	saccharomyc
900	5	3.7	238	1	PELX_ERWCA	P16530	erwinia car	973	5	3.7	259	1	PPNK_MYCPN	P75508	mycoplasma
901	5	3.7	238	1	PRCC_RAT	P33579	rattus norv	974	5	3.7	259	1	YCBC_ECOLI	P36565	escherichia
902	5	3.7	238	1	Y035_TREPA	O83078	treponema p	975	5	3.7	259	1	YQJO_BACSU	P54554	bacillus su
903	5	3.7	239	1	3MGH_PSEAE	Q9hxl7	pseudomonas	976	5	3.7	260	1	CABV_BOVIN	P04467	bos taurus
904	5	3.7	239	1	RS2_HAEIN	P44371	haemophilus	977	5	3.7	260	1	CABV_HUMAN	P05937	homo sapien
905	5	3.7	240	1	HIS4_STRCO	P16250	streptomyce	978	5	3.7	260	1	CABV_MOUSE	P12658	mus musculu
906	5	3.7	240	1	LECS_VATNA	P81371	vatairea ma	979	5	3.7	260	1	CABV_RAT	P07171	rattus norv
907	5	3.7	240	1	RS2_ECOLI	P02351	escherichia	980	5	3.7	261	1	CABV_CHICK	P04354	gallus gall
908	5	3.7	240	1	VA46_VACCV	P26672	vaccinia vi	981	5	3.7	261	1	CLDI_HUMAN	P56856	homo sapien
909	5	3.7	241	1	143B_ARATH	Q9s928	arabidopsis	982	5	3.7	261	1	COX3_RABIT	O79433	oryctolagus

983 5 3.7 261 1 DHSB_RICCN Q92jj8 rickettsia
 984 5 3.7 261 1 HXC9_FUGRU O42502 fugu rubrip
 985 5 3.7 261 1 Y602_METJA Q58019 methanococ
 986 5 3.7 261 1 YSCT_YERPE P40299 versinia pe
 987 5 3.7 262 1 CUT8_SCHPO P38937 schizosacch
 988 5 3.7 262 1 GRAA_HUMAN P12544 homo sapien
 989 5 3.7 262 1 LAMB_ECOLI P38096 emericehia
 990 5 3.7 262 1 MODE_ECOLI P46930 escherichia
 991 5 3.7 262 1 NCAP_INSV P28975 impatiens n
 992 5 3.7 262 1 NCAP_INSV Q01808 impatiens n
 993 5 3.7 262 1 RS4V_CHICK P22090 homo sapien
 994 5 3.7 262 1 RS4V_CHICK P47836 gallus gall
 995 5 3.7 262 1 YJHL_ECOLI P39360 escherichia
 996 5 3.7 262 1 Y552_CAEEL Q09462 caenorhabdi
 997 5 3.7 262 1 YXBG_BAGSU P46331 bacillus su
 998 5 3.7 263 1 COV1_HUMAN Q16206 homo sapien
 999 5 3.7 263 1 ITMA_HUMAN O43736 homo sapien
 1000 5 3.7 263 1 ITMA_MOUSE Q61500 mus musculus

ALIGNMENTS

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RESULT 1
PLL_HUMAN
ID PLL_HUMAN STANDARD; PRT; 217 AA.
AC P01243;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-APR-1988 (Rel. 07, Last sequence update)
DE Lactogen precursor (Choriomammotropin) (Chorionic somatomammotropin).
GN CSH1 AND CSH3.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (GENE CSH1).
RX MEDLINE=85030426; PubMed=6208192;
RA Selby M.J., Barta A., Baxter J.D., Bell G.I., Eberhardt N.L.;
RT "Analysis of a major human chorionic somatomammotropin gene. Evidence
RT for two functional promoter elements.";
RL J. Biol. Chem. 259:13131-13138(1984).
RN [2]
RP SEQUENCE FROM N.A. (GENE CSH3).
RX MEDLINE=87161235; PubMed=3030680;
RA Hirt H., Kimelman J., Birnbaum M.J., Chen E.Y., Seeburg P.H.,
RA Eberhardt N.L., Barta A.;
RT "The human growth hormone gene locus: structure, evolution, and
RT allelic variations.";
RL DNA 6:59-70(1987).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=83160916; PubMed=6300056;
RA Barrera-Saldana H.A., Seeburg P.H., Saunders G.F.;
RT "Two structurally different genes produce the same secreted human
RT placental lactogen hormone.";
RL J. Biol. Chem. 258:3787-3793(1983).
RN [4]
RP SEQUENCE FROM N.A. (GENES CSH1 AND CSH3).
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [5]
RP SEQUENCE.
RX MEDLINE=83182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).

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RN [6]
RP SEQUENCE OF 50-217 FROM N.A.
RX MEDLINE=78071761; PubMed=593368;
RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
RT "Construction and analysis of recombinant DNA for human chorionic
RT somatomammotropin.";
RL Nature 270:494-499(1977).
RN [7]
RP SEQUENCE OF 27-217.
RX MEDLINE=73201971; PubMed=4712450;
RA Li C.H., Dixon J.S., Chung D.;
RT "Amino acid sequence of human chorionic somatomammotropin.";
RL Arch. Biochem. Biophys. 155:95-110(1973).
RN [8]
RP SEQUENCE OF 27-117.
RX MEDLINE=72016313; PubMed=5286363;
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RT "Amino-acid sequence of human placental lactogen.";
RL Nature New Biol. 233:59-61(1971).
RN [9]
RP ERRATUM.
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RL Nature New Biol. 235:64-64(1972).
RN [10]
RP INTERCHAIN DISULFIDE BONDS.
RX MEDLINE=79173081; PubMed=438159;
RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;
RT "Identification of the interchain disulfide bonds of dimeric human
RT placental lactogen.";
RL J. Biol. Chem. 254:3782-3787(1979).
CC -!- FUNCTION: SIMILAR TO THAT OF SOMATOTROPIN.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- MISCELLANEOUS: THE SEQUENCE OF CSH-1 IS SHOWN.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL; V00573; CAA23836.1; -
DR EMBL; J00289; AAA98747.1; -
DR EMBL; K02401; AAA52115.1; -
DR EMBL; M15894; AAA52116.1; -
DR EMBL; J03071; AAA52551.1; -
DR EMBL; J00118; AAA98621.1; -
DR PIR; A01512; LCHUC.
DR PIR; A26449; A26449.
DR PIR; E32435; E32435.
DR PIR; E32435; E32435.
DR HSSP; P01241; 1HWH.
DR MIM; 150200; -
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone_1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00286; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Placenta; Multigene family; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 LACTOGEN.
FT DISULFID 79 191
FT DISULFID 208 215
FT DISULFID 215 215
FT VARIANT 3 3
FT VARIANT 104 105
FT VARIANT 84 84
FT CONFLICT 84 84
FT CONFLICT 95 95

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FT	CONFLICT	116	116	MISSING (IN REF. 8).
FT	CONFLICT	134	136	SDD -> BBS (IN REF. 8).
SQ	SEQUENCE	217 AA;	25020 MW;	235B0DC7A711F431 CRC64;
Query Match				
Best Local Similarity 58.5%; Score 79; DB 1; Length 217;				
Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps				
QY	55	FSDSIPTSNMEETQOKSNLELLRISILLIESWLEPVFRFLSRMFANNLVYDTSDDYHL	114	
Db	80	FSDSIPTSNMEETQOKSNLELLRISILLIESWLEPVFRFLSRMFANNLVYDTSDDYHL	139	
QY	115	LXDLLEGIOQLMGRLDGS	133	
Db	140	LXDLLEGIOQLMGRLDGS	158	
RESULT 2				
ID	SOMA	HUMAN	STANDARD;	PRT; 217 AA.
AC	P01241;			
DT	21-JUL-1986	(Rel. 01, Created)		
DT	01-MAR-1992	(Rel. 21, Last sequence update)		
DT	16-OCT-2001	(Rel. 40, Last annotation update)		
DE	Somatotropin precursor	(Growth hormone).		
DE	GH1.			
OS	Homo sapiens	(Human).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RP	SEQUENCE FROM N.A.			
RP	MEDLINE=82014939; PubMed=6269091;			
RA	Denoto F.M., Moore D.D., Goodman H.M.;			
RA	"Human growth hormone DNA sequence and mRNA structure: possible			
RT	alternative splicing.";			
RT	Nucleic Acids Res. 9:3719-3730(1981).			
RP	SEQUENCE FROM N.A.			
RP	MEDLINE=80034477; PubMed=386281;			
RA	Roskam W., Rougeon F.;			
RA	"Molecular cloning and nucleotide sequence of the human growth			
RT	hormone structural gene.";			
RT	Nucleic Acids Res. 7:305-320(1979).			
RP	SEQUENCE FROM N.A.			
RP	MEDLINE=79203293; PubMed=377496;			
RA	Martial J.A., Hallowell R.A., Baxter J.D., Goodman H.M.;			
RA	"Human growth hormone: complementary DNA cloning and expression in			
RT	bacteria.";			
RT	Science 205:602-607(1979).			
RP	SEQUENCE FROM N.A.			
RP	MEDLINE=89307277; PubMed=2744760;			
RA	Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,			
RA	Gelinas R.E., Seeburg P.H.;			
RA	"The human growth hormone locus: nucleotide sequence, biology, and			
RT	evolution.";			
RT	Genomics 4:479-497(1989).			
RP	SEQUENCE OF 27-217.			
RP	MEDLINE=69289202; PubMed=5810834;			
RA	Li C.H., Dixon J.S., Liu W.-K.;			
RA	"Human pituitary growth hormone. XIX. The primary structure of the			
RT	hormone.";			
RT	Arch. Biochem. Biophys. 133:70-91(1969).			
RP	SEQUENCE OF 27-217, AND REVISIONS.			
RP	MEDLINE=72143935; PubMed=5144027;			
RA	Li C.H., Dixon J.S.;			
RA	"Human pituitary growth hormone. 32. The primary structure of the			
RT	hormone: revision.";			
RT				

```

RX MEDLINE=97113023; PubMed=8943276;
RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,
RT Norstedt G.;
RT "Crystal structure of an antagonist mutant of human growth hormone,
RT G120R, in complex with its receptor at 2.9-A resolution.";
RL J. Biol. Chem. 271:32197-32203(1996).
CC -|- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- ALTERNATIVE PRODUCTS: A 20 kDa SHORT VARIANT WHICH LACKS 58-72 IS
CC PRODUCED AS THE RESULT OF SPLICING AT THE ALTERNATE JUNCTION
CC OF THE SECOND INTRON.
CC -|- DISEASE: DEFECTS IN GH1 ARE A CAUSE OF PITUITARY DWARFISM I AND
CC IV.
CC -|- PHARMACEUTICAL: Available under the names Nutropin or Protropin
CC (Genentech), Norditropin (Novo Nordisk), Genotropin (Pharmacia
CC Upjohn), Humatrope (Eli Lilly) and Saizen or Serostim (Serono).
CC Used for the treatment of growth hormone deficiency and for
CC Turner's syndrome.
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL; V00519; CAA23778.1; -
DR EMBL; J03071; AAA32549.1; -
DR EMBL; M13438; AAA98618.1; -
DR EMBL; A12770; CAA01057.1; -
DR EMBL; A00469; CAA00065.1; -
DR PIR; A01510; STHU.
DR PIR; A32435; A32435.
DR PDB; 3HRH; 30-APR-94.
DR PDB; 1HUW; 31-JAN-94.
DR PDB; 1HGU; 07-DEC-95.
DR PDB; 1HWG; 19-NOV-97.
DR PDB; 1HHW; 19-NOV-97.
DR PDB; 1AXI; 28-JAN-98.
DR PDB; 1A22; 28-APR-98.
DR PDB; 1BP3; 23-SEP-98.
DR MIM; 139250; -.
DR MIM; 262400; -.
DR MIM; 262650; -.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Pituitary; Hormone; Alternative splicing; Signal; 3D-structure;
KW Dwarfism; Pharmaceutical; Polymorphism.
FT SIGNAL 1 26
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191
FT DISULFID 208 215
FT VARSPPLIC 58 72
FT VARIANT 3 3
FT VARIANT 105 105
FT VARIANT 136 136
FT HELIX 32 61
FT HELIX 64 72
FT TURN 76 77
FT TURN 80 83
FT HELIX 90 94
FT TURN 95 95
FT HELIX 98 110
FT TURN 111 114

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FT HELIX 115 125
Query Match 16.3%; Score 22; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 9.5e-15;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LKDLKEEGIQTLMGRLDGSPR 135
Db 139 LKDLKEEGIQTLMGRLDGSPR 160
|||||
RESULT 3
SOMA_CALJA STANDARD; PRT; 217 AA.
AC Q9GMB3;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (growth hormone).
GN GH1.
OS Callitrix jacchus (Common marmoset).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callitrix.
OX NCBI_TaxID=9493;
RN SEQUENCE FROM N.A.
RA Wallis O.C., Wallis M.;
RT "Cloning and characterisation of a putative growth hormone encoding
RT gene from the marmoset (Callitrix jacchus).";
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
CC -|- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL; AJ297563; CAC03481.1; -
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT VARSPPLIC 58 72 BY SIMILARITY.
FT VARIANT 217 AA; 24959 MW; E102151A12CEG192 CRC64;
SQ SEQUENCE 217 AA; 24959 MW; E102151A12CEG192 CRC64;

Query Match 15.6%; Score 21; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 9.6e-14;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 115 LKDLKEEGIQTLMGRLDGSPR 135
Db 140 LKDLKEEGIQTLMGRLDGSPR 160
|||||
RESULT 4
SOMA_MACMU STANDARD; PRT; 217 AA.
AC P33033;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 01-FEB-1996 (Rel. 33, Last annotation update)

```

Mammalia; Eutheria; Primates; Catarrhini; Hominoidea; Homo.

NBI_TaxID=9606;

[1]

SEQUENCE FROM N.A.

Medline=89307277; Pubmed=2744760;

Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,

Gellins R.E., Seeburg P.H.;

"The human growth hormone locus: nucleotide sequence, biology, and evolution.";

Genomics 4:479-497(1989).

[2]

SEQUENCE FROM N.A.

Medline=88243769; Pubmed=3379057;

Cooke N.E., Ray J., Emery J.G., Liehaber S.A.;

"Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.";

J. Biol. Chem. 263:9001-9006(1988).

[3]

SEQUENCE FROM N.A.

Medline=83182010; Pubmed=7169009;

Seeburg P.H.;

The human growth hormone gene family: nucleotide sequences show recent divergence and predict a new polypeptide hormone.";

DNA 1:239-249(1982).

[4]

SEQUENCE FROM N.A.

Medline=89024984; Pubmed=2460050;

Iqout A., Scippo M.L., Franke F., Henken G.;

"Cloning and nucleotide sequence of placental hGH-V cDNA.";

Arch. Int. Physiol. Biochim. 96:63-67(1988).

CC CC -! SUBCELLULAR LOCATION: Secreted.

CC CC -! ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED BY ALTERNATIVE SPLICING OF THE SAME GENE.

CC CC -! TISSUE SPECIFICITY: THIS PROTEIN SEEMS TO BE EXPRESSED IN THE PLACENTA.

CC CC -! SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

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EMBL; K00470; AAA98619.1; -

DR DR EMBL; J03756; AAB59548.1; -

DR DR EMBL; J03071; AAA52552.1; -

DR DR EMBL; X38451; AAA35891.1; -

DR DR PIR; A01511; STHOV.

DR DR PIR; B28072; B28072.

DR DR PIR; D32435; D32435.

DR DR HSP; P01241; LHWH.

DR DR MIM; 139240; -

DR DR InterPro: IPR001400; SOMATOTROPIN.

DR DR Pfam: PF00103; hormone_1

DR DR PRINSE; PRO0836; SOMATOTROPIN.

DR DR PROSITE; PS00266; SOMATOTROPIN_1; 1.

DR DR PROSITE; PS00338; SOMATOTROPIN_2; 1.

KW Hormone; Placenta; Signal; Glycoprotein; Alternative splicing.

FT SIGNAL 1 26

FT CHAIN 27 217 GROWTH HORMONE VARIANT I.

FT FT DISULFID 79 191 BY SIMILARITY.

FT FT DISULFID 208 215 BY SIMILARITY.

FT FT CARBOHYD 166 166 N-LINKED (GLCNAC...) (POTENTIAL).

FT FT CONFLICT 35 35 L -> P (IN REF. 3).

FT FT CONFLICT 109 109 T -> I (IN REF. 2 AND 4).

SQ SEQUENCE 217 AA; 24987 MW; 40FE8620A5138D1C CRC64;

Query Match 11.9%; Score 16; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 9.9e-09;

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Matches 16; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 68 TOOKSNLELLRLISLL 83
Db 93 TOOKSNLELLRLISLL 108

RESULT 6
SOMV_HUMAN
ID SOMV_HUMAN STANDARD; PRT; 256 AA.
AC P09587;
DT 01-MAR-1989 (Rel. 10, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Growth hormone variant II precursor (GH-V2).
GN GH2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
RA Gelinas R.E., Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution."
RL Genomics 4:479-497(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=88243769; PubMed=3379057;
RA Cooke N.E., Ray J., Emery J.G., Liebhaber S.A.;
RA "Two distinct species of human growth hormone-variant mRNA in the
RT human placenta predict the expression of novel growth hormone
RT proteins."
RL J. Biol. Chem. 263:9001-9006(1988).
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED BY
CC -1- ALTERNATIVE SPLICING OF THE SAME GENE.
CC -1- MISCELLANEOUS: THE C-TERMINAL REGION OF THIS PROTEIN IS DIFFERENT
CC FROM THAT OF ALL OTHERS PROTEINS OF THIS FAMILY.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL; J03756; AAB59547.1; -.
DR PIR; A28072; A28072.
DR HSSP; P01241; 1HUW.
DR MIM; 139240; -.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone. 1
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; FALSE NEG.
KW Hormone; Placenta; Signal; Alternative splicing.
FT SIGNAL 1 26
FT CHAIN 27 256 GROWTH HORMONE VARIANT II.
FT CONFLICT 237 240 AEAG -> EAGR (IN REF. 2).
FT SEQUENCE 256 AA; 28778 MW; 4605AD39FD8C44F6 CRC64;

Query Match 11.9%; Score 16; DB 1; Length 256;
Best Local Similarity 100.0%; Pred. No. 1.le-08;
Matches 16; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 68 TOOKSNLELLRLISLL 83
Db 93 TOOKSNLELLRLISLL 108
```

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RESULT 7
SOMA_SAIBB
ID SOMA_SAIBB STANDARD; PRT; 217 AA.
AC P58343;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1.
OS Saimiri boliviensis boliviensis (Bolivian squirrel monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.
OX NCBI_TaxID=39432;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21265430; PubMed=11371582;
RA Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;
RA "Episodic evolution of growth hormone in primates and emergence of the
RT species specificity of human growth hormone receptor."
RL Mol. Biol. Evol. 18:945-953(2001).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL; AF339060; AAK62287.1; -.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT SEQUENCE 217 AA; 24864 MW; 9515289992C529F7 CRC64;

Query Match 11.1%; Score 15; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 1e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 67 ETOOKSNLELLRLISL 81
Db 92 ETOOKSNLELLRLISL 106

RESULT 8
SOMV_MACMU
ID SOMV_MACMU STANDARD; PRT; 217 AA.
AC Q07370; Q28494;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Growth hormone variant I precursor (GH-V) (Placenta-specific growth
DE hormone).
GN GH2.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;
OC Cercopitheidae; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RA Golos T.G.;
```

Submitted (JAN-1994) to the EMBL/GenBank/DBJ databases.
[2]
RA SEQUENCE FROM N.A.
RT TISSUE=Placenta;
RC MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC -!- SUBCELLULAR LOCATION: Secreted (By similarity).
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: U02293; AAA03391.1; -;
DR EMBL: L16555; AAA20180.1; -;
DR HSSP: P01241; LHCU.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Placenta; Signal; Glycoprotein.
FT SIGNAL 1 26
FT CHAIN 27 217 GROWTH HORMONE VARIANT I.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT CONFLICT 57 57 L -> F (IN REF. 2).
FT CONFLICT 152 152 E -> G (IN REF. 2).
SQ SEQUENCE 217 AA; 25221 MW; 8DB116CBC24EA090 CRC64;

Query Match 8.9%; Score 12; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.0001;
Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 66 EETQKSNLELL 77
Db 91 EETQKSNLELL 102

RESULT 9
SOMA_BOVIN
ID SOMA_BOVIN STANDARD; PRT; 217 AA.
AC P01246; Q28117;
DT 21-JUL-1986 (Rel. 01, Created)
DT 21-JUL-1986 (Rel. 01, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1 OR GH.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RA SEQUENCE FROM N.A.
RX MEDLINE=80249494; PubMed=6893197;
RA Miller W.L., Martial J.A., Baxter J.D.;
RT "Molecular cloning of DNA complementary to bovine growth hormone
RT mRNA.";
RL J. Biol. Chem. 255:7521-7524(1980).
RN [2]
RA SEQUENCE FROM N.A.
RX MEDLINE=83209123; PubMed=6303731;
RA Seeburg P.H., Sias S., Adelman J., de Boer H.A., Hayflick J.,

RA Thurani P., Goeddel D.V., Heyneker H.L.;
RT "Efficient bacterial expression of bovine and porcine growth
RT hormones.";
RL DNA 2:37-45(1983).
RN [3]
RA SEQUENCE FROM N.A.
RP TISSUE=Liver;
RX MEDLINE=84058733; PubMed=6357899;
RA Gordon D.F., Quick D.P., Erwin C.R., Donelson J.E., Maurer R.A.;
RT "Nucleotide sequence of the bovine growth hormone chromosomal gene.";
RL Mol. Cell. Endocrinol. 33:81-95(1983).
RN [4]
RA SEQUENCE FROM N.A.
RA Rubtsov P.M., Chernov B.K., Gorbulev V.G., Parsadanyan A.S.,
RA Sverdlova P.S., Chupueva V.V., Golova Y.B., Batchikova N.V.,
RA Zhvirblis G.S., Skryabin K.G., Baev A.A.;
RT "Genetic engineering of peptide hormones.";
RL Mol. Biol. (Mosk) 19:226-235(1985).
RN [5]
RA SEQUENCE FROM N.A.
RC STRAIN=NELORE; TISSUE=Pituitary;
RA Mauro S.M.Z., Ferro M.I.T., Macari M., Ferro J.A.;
RT "The complete sequence of a cDNA encoding the bovine growth hormone.";
RL Submitted (NOV-1997) to the EMBL/GenBank/DBJ databases.
RN [6]
RA SEQUENCE.
RX MEDLINE=74028758; PubMed=4584625;
RA Wallis M.;
RT "The primary structure of bovine growth hormone.";
RL FEBS Lett. 35:11-14(1973).
RN [7]
RA SEQUENCE OF 91-96 AND 104-121.
RX MEDLINE=74146429; PubMed=4856718;
RA Graf L., Li C.H.;
RT "On the primary structure of pituitary bovine growth hormone.";
RL Biochem. Biophys. Res. Commun. 56:168-176(1974).
RN [8]
RA SEQUENCE.
RX MEDLINE=73249153; PubMed=4580883;
RA Santome J.A., Dellacha J.M., Paladini A.C., Pena C., Biscoglio M.J.,
RA Daurat S.T., Poskus E., Wolfenstein C.E.M.;
RT "Primary structure of bovine growth hormone.";
RL Eur. J. Biochem. 37:164-170(1973).
RN [9]
RA SEQUENCE OF 27-49 FROM N.A.
RX MEDLINE=86004063; PubMed=3899556;
RA George H.J., L'Italien J.J., Pilacinski W.P., Glassman D.L.,
RA Krzyzek R.A.;
RT "High-level expression in Escherichia coli of biologically active
RT bovine growth hormone.";
RL DNA 4:273-281(1985).
RN [10]
RA EVIDENCE FOR TWO ALLELIC CHAINS.
RX MEDLINE=71207803; PubMed=5579941;
RA Seavey B.K., Singh R.N.P., Lewis U.J., Geschwind I.I.;
RT "Bovine growth hormone: evidence for two allelic forms.";
RL Biochem. Biophys. Res. Commun. 43:189-195(1971).
RN [11]
RA CHARACTERIZATION.
RX MEDLINE=75133461; PubMed=1123321;
RA Yamasaki N., Shimanaka J., Sonenborg M.;
RT "Studies on the common active site of growth hormone. Revision of the
RT amino acid sequence of an active fragment of bovine growth hormone.";
RL J. Biol. Chem. 250:2510-2514(1975).
RN [12]
RA 3D-STRUCTURE MODELING.
RX MEDLINE=91214979; PubMed=2021631;
RA Carlucci L., Chou K.-C., Maggiora G.M.;
RT "A heuristic approach to predicting the tertiary structure of bovine
RT somatotropin.";
RL Biochemistry 30:4389-4398(1991).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.

```
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; J00008; AAA30542.1; -
DR EMBL; V00111; CAA23445.1; -
DR EMBL; M27325; AAA30543.1; -
DR EMBL; M57764; AAA30544.1; -
DR EMBL; M23813; AAA30556.1; -
DR EMBL; AF034386; AAB92549.1; -
DR EMBL; M11558; AAA30545.1; -
DR EMBL; A08489; CAA00787.1; -
DR PIR; A01515; STBO.
DR PDB; 1BST; 15-OCT-94.
DR InterPro; IPR001400; SOMATOTROPIN.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal; Polymorphism; 3D-structure.
FT SIGNAL 1 27
FT CHAIN 28 217 SOMATOTROPIN.
FT DISULFID 79 190
FT DISULFID 207 215
FT VARIANT 153 153 L -> V (IN 30% OF THE MOLECULES).
FT CONFLICT 95 95 Q -> E (IN REF. 8).
FT CONFLICT 110 121 QSWLGLQLSLR -> SQWLPGFLR (IN REF. 8).
FT CONFLICT 194 194 D -> N (IN REF. 8).
SQ SEQUENCE 217 AA; 24558 MW; 99ED8D01B852EF89 CRC64;

Query Match 8.1%; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.001;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRLISLLLI 84
Db 99 LELLRLISLLLI 109
|||||
[1]

RESULT 10
SOMA_BUBBU
ID SOMA_BUBBU STANDARD; PRT; 217 AA.
AC O18938;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1 OR GH.
OS Bubalus bubalis (Domestic water buffalo).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bubalus.
OX NCBI_TaxID=89462;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Blood;
RA Tiwari G., Garg L.C.;
RT "Cloning and characterization of growth hormone encoding gene in
RT Bubalus bubalis."
RL Submitted (SEP-1998) to the EMBL/GenBank/DBJ databases.
CC -|- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; J00008; AAA30542.1; -
DR EMBL; V00111; CAA23445.1; -
DR EMBL; M27325; AAA30543.1; -
DR EMBL; M57764; AAA30544.1; -
DR EMBL; M23813; AAA30556.1; -
DR EMBL; AF034386; AAB92549.1; -
DR EMBL; M11558; AAA30545.1; -
DR EMBL; A08489; CAA00787.1; -
DR PIR; A01515; STBO.
DR PDB; 1BST; 15-OCT-94.
DR InterPro; IPR001400; SOMATOTROPIN.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal; Polymorphism; 3D-structure.
FT SIGNAL 1 27
FT CHAIN 28 217 SOMATOTROPIN.
FT DISULFID 79 190
FT DISULFID 207 215
FT VARIANT 153 153 L -> V (IN 30% OF THE MOLECULES).
FT CONFLICT 95 95 Q -> E (IN REF. 8).
FT CONFLICT 110 121 QSWLGLQLSLR -> SQWLPGFLR (IN REF. 8).
FT CONFLICT 194 194 D -> N (IN REF. 8).
SQ SEQUENCE 217 AA; 24558 MW; 99ED8D01B852EF89 CRC64;
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CC -----
DR EMBL; J00008; AAA30542.1; -
DR EMBL; V00111; CAA23445.1; -
DR EMBL; M27325; AAA30543.1; -
DR EMBL; M57764; AAA30544.1; -
DR EMBL; M23813; AAA30556.1; -
DR EMBL; AF034386; AAB92549.1; -
DR EMBL; M11558; AAA30545.1; -
DR EMBL; A08489; CAA00787.1; -
DR PIR; A01515; STBO.
DR PDB; 1BST; 15-OCT-94.
DR InterPro; IPR001400; SOMATOTROPIN.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal; Polymorphism; 3D-structure.
FT SIGNAL 1 27
FT CHAIN 28 217 SOMATOTROPIN.
FT DISULFID 79 190
FT DISULFID 207 215
FT VARIANT 153 153 L -> V (IN 30% OF THE MOLECULES).
FT CONFLICT 95 95 Q -> E (IN REF. 8).
FT CONFLICT 110 121 QSWLGLQLSLR -> SQWLPGFLR (IN REF. 8).
FT CONFLICT 194 194 D -> N (IN REF. 8).
SQ SEQUENCE 217 AA; 24558 MW; 99ED8D01B852EF89 CRC64;

Query Match 8.1%; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.001;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRLISLLLI 84
Db 99 LELLRLISLLLI 109
|||||
[1]

RESULT 11
SOMA_CEREL
ID SOMA_CEREL STANDARD; PRT; 217 AA.
AC P56437;
DT 15-JUL-1998 (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1.
OS Cervus elaphus (Red deer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Cervidae;
OC Cervidae; Cervinae; Cervus.
OX NCBI_TaxID=9860;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Tongue;
RA Lioupis A., Wallis O.C., Wallis M.;
RL Submitted (MAY-1997) to the EMBL/GenBank/DBJ databases.
CC -|- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL; Y12578; CAA73158.1; -
DR HSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
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DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 27 BY SIMILARITY.
FT CHAIN 28 217 SOMATOTROPIN.
FT DISULFID 79 190 BY SIMILARITY.
FT DISULFID 207 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24558 MW; 6F22D5241468B7AD CRC64;

Query Match      8.1%; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.001;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Caps 0;

QY 74 LELLRLSILLI 84
Db 99 LELLRLSILLI 109

RESULT 12
SOMA_SHEEP
ID SOMA_SHEEP STANDARD; PRT; 217 AA.
AC P01247; P07289; Q29404;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-NOV-1988 (Rel. 09, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1.
OS Ovis aries (Sheep),
OS Capra hircus (Goat), and
OS Bubalus bubalis (Domestic water buffalo).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940, 9925, 89462;
RN [1]
RP SEQUENCE FROM N.A.
RC SPECIES=Sheep;
RX MEDLINE=89016583; PubMed=3174441;
RA Orian J.M., O'Mahoney J.V., Brandon M.R.;
RT "Cloning and sequencing of the ovine growth hormone gene.";
RL Nucleic Acids Res. 16:9046-9046(1988).
RN [2]
RP SEQUENCE FROM N.A.
RC SPECIES=Sheep;
RX MEDLINE=89287334; PubMed=2660907;
RA Warwick J.M., Wallis O.C., Wallis M.;
RT "Cloning, sequence and expression in Escherichia coli of cDNA for
ovine pregrowth hormone.";
RL Biochim. Biophys. Acta 1008:247-250(1989).
RN [3]
RP SEQUENCE FROM N.A.
RC SPECIES=Sheep;
RX MEDLINE=88266619; PubMed=3453044;
RA Byrne C.R., Wilson B.W., Ward K.A.;
RT "The isolation and characterisation of the ovine growth hormone
gene.";
RL Aust. J. Biol. Sci. 40:459-468(1987).
RN [4]
RP SEQUENCE FROM N.A.
RC SPECIES=Sheep; TISSUE=Pituitary;
RX MEDLINE=93093692; PubMed=1459643;
RA Guron C., Rao K.B., Jain S.K., Totey S.M., Talwar G.P.;
RT "Cloning and nucleotide sequencing of sheep growth hormone cDNA.";
RL Indian J. Exp. Biol. 30:659-663(1992).
RN [5]
RP SEQUENCE FROM N.A.
RC SPECIES=Sheep; STRAIN=AWASSI;
RA Ofir R., Gootwine E.;
RL Submitted (JUL-1997) to the EMBL/genbank/DBDJ databases.
RN [6]
RP SEQUENCE OF 28-217.
RC SPECIES=Sheep;
RX MEDLINE=73220070; PubMed=4736985;

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RA Li C.H., Gordon D., Knorr J.;
RT "The primary structure of sheep pituitary growth hormone.";
RL Arch. Biochem. Biophys. 156:493-508(1973).
RN [7]
RP SEQUENCE OF 150-217.
RX MEDLINE=72134042; PubMed=5062423;
RA Bellair J.T.;
RT "Ovine growth hormone. Sequence of the C-terminal 68 amino acids.";
RL Biochem. Biophys. Res. Commun. 46:1128-1134(1972).
RN [8]
RP SEQUENCE FROM N.A.
RC SPECIES=C.hircus; STRAIN=SAANEN;
RX MEDLINE=88137627; PubMed=3342884;
RA Yamano Y., Oyabayashi K., Okuno M., Yato M., Kioka N., Manabe E.,
Hashi H., Sakai H., Komano T., Utsumi K., Iritani A.;
RT "Cloning and sequencing of cDNA that encodes goat growth hormone.";
RL FEBS Lett. 228:301-304(1988).
RN [9]
RP SEQUENCE FROM N.A.
RC SPECIES=C.hircus;
RX MEDLINE=88233947; PubMed=3375065;
RA Yato M., Yamano Y., Oyabayashi K., Okuno M., Kioka N., Manabe E.,
Hashi H., Sakai H., Komano T., Utsumi K., Iritani A.;
RT "Nucleotide sequence of the growth hormone gene cDNA from goat Capra
hircus L. (Tokara).";
RL Nucleic Acids Res. 16:3578-3578(1988).
RN [10]
RP SEQUENCE FROM N.A.
RC SPECIES=C.hircus;
RX MEDLINE=88233947; PubMed=3375065;
RA Kioka N., Manabe E., Abe M., Hashi H., Yato M., Okuno M., Yamano Y.,
Sakai H., Komano T., Utsumi K., Iritani A.;
RT "Cloning and sequencing of goat growth hormone gene.";
RL Agric. Biol. Chem. 53:1583-1587(1989).
RN [11]
RP SEQUENCE FROM N.A.
RC SPECIES=B.bubalis;
RA Verma S., Garg L.C.;
RL Submitted (MAR-1993) to the EMBL/GenBank/DBDJ databases.
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC
CC EMBL; X12546; CAA31063.1; -
CC EMBL; X15976; CAA34098.1; -
CC EMBL; S50877; AAB24467.2; -
CC EMBL; M37310; AAA31527.1; -
CC EMBL; AF002113; AAB63273.1; -
CC EMBL; AF002111; AAB63273.1; JOINED.
CC EMBL; AF002112; AAB63273.1; JOINED.
CC EMBL; Y00767; CAA68736.1; -
CC EMBL; X07035; CAA30083.1; -
CC EMBL; D00476; BAA00368.1; -
CC EMBL; X72947; CAA51450.1; -
CC EMBL; A09118; CAA00828.1; -
CC PIR; S02225; STSH.
CC PIR; S00321; STGT.
CC PIR; S00681; S00681.
CC PIR; JU0031; JU0031.
CC PIR; S32682; S32682.
CC HSP; P01246; 1BST.
CC InterPro; IPR001400; SOMATOTROPIN.
CC Pfam; PF00103; hormone; 1.
CC PRINTS; PR00836; SOMATOTROPIN.

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DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 27 SOMATOTROPIN.
FT CHAIN 28 217
FT DISULFID 79 190
FT DISULFID 207 215
FT CONFLICT 89 89 G -> S (IN REF. 3).
FT CONFLICT 125 125 N -> D (IN REF. 6).
FT CONFLICT 134 134 R -> L (IN REF. 3).
FT CONFLICT 173 173 T -> R (IN REF. 4).
SQ SEQUENCE 217 AA; 24630 MW; 77EC37A102584429 CRC64;

Query Match 8.1%; Score 11; DB 1; Length 217;
Best Local Similarity 100.0%; Pred. No. 0.001;
Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 74 LELLRISLLI 84
|||||
DB 99 LELLRISLLI 109

RESULT 13
SOMA_BALBO
ID SOMA_BALBO STANDARD; PRT; 190 AA.
AC P33092;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1993 (Rel. 27, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin (Growth hormone).
GN GHL.
OS Baleenoptera borealis (Sei whale).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
OC Baleenopteridae; Baleenoptera.
OX NCBI_TaxID=9768;
RN [1]
RP SEQUENCE.
RX MEDLINE=83000569; PubMed=7115813;
RA Yudaev N.A., Pankov Y.A., Bulatov A.A., Osipova T.A.;
RT "Amino acid sequence of seiwhale somatotropin.";
RL Biochimia 47:1059-1069(1982).
RN [2]
RP PRELIMINARY PARTIAL SEQUENCE.
RA Osipova T.A., Bulatov A.A., Pankov Y.A.;
RT "Structural studies of tryptic peptides from large cyanogen bromide fragments of sei whale (Balaenoptera borealis) somatotropin.";
RL Bioorg. Khim. 4:1589-1599(1978).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

DR PIR; PNO140; PNO140.
DR PIR; JN0387; JN0387.
DR HSSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary.
FT DISULFID 52 163 BY SIMILARITY.
FT DISULFID 180 188 BY SIMILARITY.
SQ SEQUENCE 190 AA; 21835 MW; 09FBFF6DB14A75D6 CRC64;

Query Match 6.7%; Score 9; DB 1; Length 190;
Best Local Similarity 100.0%; Pred. No. 0.093;
Matches 9; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 115 LKDLLEGIQ 123
|||||

DB 112 LKDLLEGIQ 120

RESULT 14
SOMA_LAMPA
ID SOMA_LAMPA STANDARD; PRT; 190 AA.
AC P37885;
DT 01-OCT-1994 (Rel. 30, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin (Growth hormone).
GN GHL.
OS Lama guanicoe pacos (Alpaca).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Tylopoda; Camelidae; Lama.

OX NCBI_TaxID=30538;
RN [1]
RP SEQUENCE.
RX MEDLINE=92104767; PubMed=1761365;
RA de Jimenez Bonino M.B., de Nue I.A., Ore R., Sanchez D., Ferrara P., Capdevielle J., Cascone O.;
RT "Primary structure of alpaca growth hormone.";
RL Int. J. Pept. Protein Res. 38:193-197(1991).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

DR PIR; A61584; A61584.
DR HSSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary.
FT DISULFID 52 163 BY SIMILARITY.
FT DISULFID 180 188 BY SIMILARITY.
SQ SEQUENCE 190 AA; 21789 MW; A7C67266A8B96A10 CRC64;

Query Match 6.7%; Score 9; DB 1; Length 190;
Best Local Similarity 100.0%; Pred. No. 0.093;
Matches 9; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 115 LKDLLEGIQ 123
|||||

DB 112 LKDLLEGIQ 120

RESULT 15
SOMA_LOXAF
ID SOMA_LOXAF STANDARD; PRT; 190 AA.
AC P20392;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1991 (Rel. 17, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin (Growth hormone).
GN GHL.
OS Loxodonta africana (African elephant).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Proboscidea; Elephantidae; Loxodonta.

OX NCBI_TaxID=9785;
RN [1]
RP SEQUENCE.

RA Hulmes J.D., Miedel M.C., Li C.H., Pan Y.C.E.;
RT "Primary structure of elephant growth hormone.";
RL Int. J. Pept. Protein Res. 33:368-372(1989).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

DR PIR; JK0219; JK0219.
DR HSSP; P01246; 1BST.

```
DR InterPro: IPR001400; SOMATOTROPIN.  
DR Pfam: PF00103; hormone; 1.  
DR PRINTS: PR00836; SOMATOTROPIN.  
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.  
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.  
KW Hormone; Pituitary.  
FT DISULFID 52 163 BY SIMILARITY.  
FT DISULFID 180 188 BY SIMILARITY.  
SQ SEQUENCE 190 AA; 21761 MW; 05B860813DB741F2 CRC64;  
  
Query Match 6.7%; Score 9; DB 1; Length 190;  
Best Local Similarity 100.0%; Pred.No. 0.093;  
Matches 9; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
QY 115 LKDLLEGIQ 123  
| | | | | | | |  
Db 112 LKDLLEGIQ 120  
  
Search completed: September 25, 2002, 10:09:45  
Job time: 233 sec
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GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 10:05:37 ; Search time 26.99 Seconds
(without alignments)
865.295 Million cell updates/sec

Title: US-09-819-094-18
Perfect score: 135
Sequence: 1 MVQTVPLSRFLFDHMLQAHK.....KDLLEGITQILMGRLDGSPR 135

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 562222 seqs, 172994929 residues

Word size : 0

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Listing first 1000 summaries

Database : SPTREMBL19.*
1: sp_archaea.*
2: sp_bacteria.*
3: sp_fungi.*
4: sp_human.*
5: sp_invertebrate.*
6: sp_mammal.*
7: sp_mhc.*
8: sp_organelle.*
9: sp_phage.*
10: sp_plant.*
11: sp_rodent.*
12: sp_virus.*
13: sp_vertebrate.*
14: sp_unclassified.*
15: sp_virus.*
16: sp_bacteriap.*
17: sp_archaeap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	79	58.5	167	4	P78451
2	79	58.5	217	4	Q14407
3	24	17.8	199	4	Q14406
4	22	16.3	217	4	Q16631
5	19	14.1	171	4	Q9UNL5
6	19	14.1	179	4	Q9HBZ1
7	19	14.1	212	6	Q07368
8	19	14.1	217	6	Q07367
9	19	14.1	217	6	Q07369
10	17	12.6	202	4	O14643
11	17	12.6	245	4	O14644
12	11	8.1	45	6	Q9TSF9
13	11	8.1	110	6	Q9N265
14	11	8.1	120	6	Q9TSG0
15	11	8.1	192	6	Q9TQW9
16	11	8.1	192	6	Q9TU21

Q95205 ovis aries
Q9bec0 tragulus ja
Q9beb9 tragulus ja
Q9pu72 cynops pyrr
Q9bwe4 gallus gall
Q95240 canis famli
Q9bdr4 galago cras
Q9jkg0 cavia porce
Q970615 spalax leuc
Q92c3 mus musculus
Q9jkm4 cavia porce
Q28957 sus scrofa
Q9pvc8 amia calva
Q91386 amia calva
Q98rn8 guillardia
Q9agw5 nostoc punc
Q9rcv5 deinococcus
P91450 caenorhabdi
Q9R8w6 bacillus ha
Q970n8 sulfolobus
Q9rvw2 deinococcus
Q95mj6 tarsius syr
Q95mj5 tarsius ban
Q97qv9 streptococc
Q96ul6 neurospora
Q91pl4 arabidopsis
Q9sly5 musa acumin
Q9sly4 musa acumin
Q9nq85 homo sapien
Q9nu52 homo sapien
Q42923 musa acumin
Q75783 homo sapien
Q9nu57 pseudomonas
Q75449 homo sapien
Q9wv86 mus musculus
Q91jz7 arabidopsis
Q9h257 homo sapien
Q9a8ml caulobacter
Q64015 bacterioph
Q32006 bacillus su
Q912n0 pseudomonas
Q74845 schizosacch
Q9vzv7 drosophila
Q91v74 arabidopsis
Q9ass4 arabidopsis
Q91xb1 mus musculus
Q9fy05 populus tre
Q9h320 homo sapien
Q9a737 caulobacter
Q9h7p3 homo sapien
Q9m9x9 arabidopsis
Q9nv68 homo sapien
Q9btb9 homo sapien
Q9hty4 homo sapien
Q9hat9 homo sapien
Q9hbg6 homo sapien
Q9hbg5 homo sapien
Q9vxl1 drosophila
Q96004 drosophila
Q93ty6 staphylococ
Q9s9c3 arabidopsis
Q88381 mus musculus
Q28899 bos taurus
Q50155 mycobacteri
Q980n8 rhizobium 1
Q89408 paramecium
Q948w1 physcomitre
Q98911 human herpe
Q9m5l1 ipomoea bat
Q9m5f8 ipomoea bat
Q91c18 antheraea p
Q9bsc2 homo sapien
Q26175 methanother

90 6 4.4 90 11 Q63499 Q63499 rattus norv
91 6 4.4 91 12 Q85424 Q85424 rabbit rota
92 6 4.4 92 16 Q9PKY1 Q9PKY1 chlamydia m
93 6 4.4 103 16 Q99PV2 Q99PV2 staphylococ
94 6 4.4 104 2 Q93DQ4 Q93DQ4 uncultured
95 6 4.4 104 16 Q34975 Q34975 bacillus su
96 6 4.4 106 17 Q97323 Q97323 sulfolobus
97 6 4.4 109 2 Q9EYV6 Q9EYV6 staphylococ
98 6 4.4 109 16 Q99V47 Q99V47 staphylococ
99 6 4.4 109 16 Q92GC8 Q92GC8 rickettsia
100 6 4.4 111 3 Q9HFO4 Q9HFO4 candida alb
101 6 4.4 112 16 Q92HS2 Q92HS2 rickettsia
102 6 4.4 115 8 Q36868 Q36868 sceloporus
103 6 4.4 115 8 Q21740 Q21740 calomys lau
104 6 4.4 115 8 Q35851 Q35851 sceloporus
105 6 4.4 115 8 Q35854 Q35854 sceloporus
106 6 4.4 115 8 Q35857 Q35857 sceloporus
107 6 4.4 117 4 Q9UL69 Q9UL69 homo sapien
108 6 4.4 117 17 Q972E8 Q972E8 sulfolobus
109 6 4.4 120 2 Q93R08 Q93R08 streptococ
110 6 4.4 120 16 Q92I14 Q92I14 rickettsia
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112 6 4.4 124 16 Q9X211 Q9X211 thermotoga
113 6 4.4 127 5 Q9V198 Q9V198 drosophila
114 6 4.4 127 5 Q26450 Q26450 hiruudo medi
115 6 4.4 129 5 Q26448 Q26448 hiruudo medi
116 6 4.4 133 3 Q9UUI9 Q9UUI9 schizosacch
117 6 4.4 135 12 Q81849 Q81849 human papil
118 6 4.4 137 2 Q9S127 Q9S127 escherichia
119 6 4.4 137 4 Q9H4X1 Q9H4X1 homo sapien
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121 6 4.4 139 16 Q99V42 Q99V42 staphylococ
122 6 4.4 140 12 Q88927 Q88927 tobacco vei
123 6 4.4 144 11 Q63307 Q63307 rattus norv
124 6 4.4 146 10 Q41182 Q41182 nicotiana t
125 6 4.4 153 10 P93275 P93275 arabidopsis
126 6 4.4 154 8 Q957T3 Q957T3 abies alba
127 6 4.4 155 8 Q79057 Q79057 aphidius er
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131 6 4.4 155 8 Q79061 Q79061 aphidius pi
132 6 4.4 155 8 Q79062 Q79062 aphidius sm
133 6 4.4 155 8 Q79063 Q79063 aphidius so
134 6 4.4 155 8 Q79070 Q79070 pauesia sp
135 6 4.4 155 8 Q79071 Q79071 pauesia sil
136 6 4.4 155 10 Q9EXT0 Q9EXT0 nicotiana t
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138 6 4.4 157 6 Q9BEI4 Q9BEI4 macaca fasc
139 6 4.4 157 16 Q9JYK9 Q9JYK9 neisseria m
140 6 4.4 160 9 Q64019 Q64019 bacterioph
141 6 4.4 160 16 Q32002 Q32002 bacillus su
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146 6 4.4 166 8 Q957S7 Q957S7 pinus mugo
147 6 4.4 166 8 Q957S6 Q957S6 pinus sylve
148 6 4.4 167 5 Q95S77 Q95S77 drosophila
149 6 4.4 168 2 Q9R7V2 Q9R7V2 yersinia pe
150 6 4.4 169 5 Q25990 Q25990 plasmodium
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152 6 4.4 172 5 Q23556 Q23556 caenorhabdi
153 6 4.4 174 16 Q9WXP3 Q9WXP3 thermotoga
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155 6 4.4 175 5 Q9BJF0 Q9BJF0 plasmodium
156 6 4.4 177 2 Q9R2I9 Q9R2I9 shigella so
157 6 4.4 177 2 Q52342 Q52342 salmonella
158 6 4.4 178 5 Q02415 Q02415 agrius conv
159 6 4.4 179 16 Q9AB56 Q9AB56 caulobacter
160 6 4.4 182 5 Q00832 Q00832 plasmodium
161 6 4.4 183 3 Q74333 Q74333 schizosacch
162 6 4.4 184 2 Q9ZF29 Q9ZF29 yersinia pe

Q9Z644 pantoea cit
Q9AB10 caulobacter
Q9HU05 pseudomonas
Q92DF2 listeria in
Q95PB8 anophella g
P94222 borrelia bu
Q9C737 arabidopsis
Q993H4 callitrichi
Q94S36 daucus caro
Q9HTU3 pseudomonas
Q9UJW9 homo sapien
Q96CQ2 homo sapien
Q9ERC3 mus musculu
Q9E8F2 bovine rota
Q9SQ1 helicobacte
Q30616 myxococcus
Q91CT2 bradyrhizob
Q94079 mus musculu
Q89517 human rotav
Q89573 human rotav
Q82014 human rotav
Q82091 human rotav
Q91810 spodoptera
Q9BQ92 ureaplasma
Q74257 pichia past
Q9KAP7 bacillus ha
P94602 clostridium
Q9HAP3 homo sapien
Q9CX92 mus musculu
Q67476 flexal viru
Q65297 anapari vir
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Q49583 borrelia ga
Q97PD4 streptococ
Q97173 clostridium
Q973Y4 sulfolobus
Q9GYZ1 sulfolobus
Q9H9U9 homo sapien
Q68758 yersinia pe
Q934T7 salmonella
Q9Q8N5 myxoma viru
Q9NTU8 homo sapien

236	6	4.4	216	11	Q9JHK3	Q9Jhk3 mus musculus	309	6	4.4	268	8	Q9TQ3	Q9tgq3 cnemidophor
237	6	4.4	217	11	Q9D0N1	Q9d0n1 mus musculus	310	6	4.4	268	8	Q9TGR0	Q9tgr0 cnemidophor
238	6	4.4	219	2	Q56931	Q56931 versinia en	311	6	4.4	268	8	Q956Q6	Q956q6 cnemidophor
239	6	4.4	219	16	Q9PGM0	Q9pgm0 xylella fas	312	6	4.4	268	11	Q63773	Q63773 rattus norv
240	6	4.4	220	10	Q9G6F4	Q9g6f4 arabidopsis	313	6	4.4	268	16	Q25445	Q25445 helicobacte
241	6	4.4	223	8	Q9TCR7	Q9tcr7 cnemidophor	314	6	4.4	289	8	Q9XKN5	Q9xkn5 cnemidophor
242	6	4.4	225	10	Q9C7Q3	Q9c7q3 arabidopsis	315	6	4.4	269	8	Q9TGO0	Q9tgr0 cnemidophor
243	6	4.4	227	8	Q9TBL6	Q9tbl6 turnix vari	316	6	4.4	269	8	Q9TGR6	Q9tgr6 cnemidophor
244	6	4.4	228	16	P74670	P74670 synechocyst	317	6	4.4	269	16	Q92J56	Q92j56 rickettsia
245	6	4.4	230	2	Q52608	Q52608 agrobacteri	318	6	4.4	270	2	O50653	O50653 paracoccus
246	6	4.4	230	10	Q22736	Q22736 arabidopsis	319	6	4.4	270	8	Q9TGR1	Q9tgr1 cnemidophor
247	6	4.4	231	13	Q91306	Q91306 rana catesb	320	6	4.4	270	11	Q9D794	Q9d794 mus musculus
248	6	4.4	231	17	P95952	P95952 sulfolobus	321	6	4.4	270	11	Q9D6P0	Q9d6p0 mus musculus
249	6	4.4	232	1	Q914M4	Q914m4 sulfolobus	322	6	4.4	270	11	Q9CQX3	Q9cqx3 mus musculus
250	6	4.4	233	5	Q95YJ3	Q95yj3 samia cynth	323	6	4.4	271	8	Q9TGP3	Q9tgp3 cnemidophor
251	6	4.4	233	5	Q95YJ2	Q95yj2 samia cynth	324	6	4.4	271	8	Q9TGP7	Q9tgp7 cnemidophor
252	6	4.4	235	11	Q9D6P2	Q9d6p2 mus musculus	325	6	4.4	271	8	Q9XKN4	Q9xkn4 cnemidophor
253	6	4.4	235	16	Q9Z8V3	Q9z8v3 chiomydia p	326	6	4.4	271	8	Q9TQJ1	Q9tqj1 cnemidophor
254	6	4.4	236	12	Q90696	Q90696 bovine herp	327	6	4.4	271	8	Q9XKN7	Q9xkn7 cnemidophor
255	6	4.4	236	16	Q9ZMP9	Q9zmp9 helicobacte	328	6	4.4	271	8	Q9TGR2	Q9tgr2 cnemidophor
256	6	4.4	236	17	O50103	O50103 pyrococcus	329	6	4.4	271	8	Q9XKN8	Q9xkn8 cnemidophor
257	6	4.4	238	16	Q99VZ8	Q99vz8 staphylococ	330	6	4.4	271	8	Q9XKN9	Q9xkn9 cnemidophor
258	6	4.4	240	5	Q9XUT5	Q9xut5 caenorhabdi	331	6	4.4	271	8	Q9XKP0	Q9xkp0 cnemidophor
259	6	4.4	240	11	Q9D4J1	Q9d4j1 mus musculus	332	6	4.4	271	8	Q9XKP2	Q9xkp2 cnemidophor
260	6	4.4	240	16	Q55896	Q55896 synechocyst	333	6	4.4	272	16	Q9KGC7	Q9kgc7 bacillus ha
261	6	4.4	241	11	Q9OYX8	Q9oym8 mus musculus	334	6	4.4	274	4	Q9H672	Q9h672 homo sapien
262	6	4.4	243	5	Q95SY9	Q95sy9 drosophila	335	6	4.4	274	16	Q97GB5	Q97gb5 clostridium
263	6	4.4	243	12	Q93501	Q93501 bovine herp	336	6	4.4	276	16	Q98WA9	Q98wa9 rhizobium l
264	6	4.4	245	10	Q9C945	Q9c945 arabidopsis	337	6	4.4	277	5	O62200	O62200 caenorhabdi
265	6	4.4	245	17	Q99069	Q99069 pyrococcus	338	6	4.4	286	5	O9NAC6	O9nac6 caenorhabdi
266	6	4.4	247	2	Q54522	Q54522 streptococc	339	6	4.4	286	17	Q9HS96	Q9hs96 halobacteri
267	6	4.4	248	10	O81405	O81405 sinapis arv	340	6	4.4	287	3	O94246	O94246 schizosacch
268	6	4.4	248	11	Q9DCN9	Q9dcn9 mus musculus	341	6	4.4	287	10	Q9LWB0	Q9lwb0 lycopersico
269	6	4.4	248	11	Q9Z211	Q9z211 mus musculus	342	6	4.4	287	16	O55924	O55924 synechocyst
270	6	4.4	249	2	Q9L184	Q9l184 streptomyce	343	6	4.4	288	2	O07881	O07881 staphylococ
271	6	4.4	251	10	O81407	O81407 sinapis arv	344	6	4.4	290	3	Q9P5T9	Q9p5t9 neurospora
272	6	4.4	251	10	O81408	O81408 sinapis arv	345	6	4.4	290	5	O9VI34	O9vi34 drosophila
273	6	4.4	251	17	Q9YK51	Q9yk51 aeropyrum p	351	6	4.4	292	10	Q9LXK9	Q9lyx9 arabidopsis
274	6	4.4	253	16	Q9JZ41	Q9jz41 neisseria m	352	6	4.4	292	16	Q9ZD98	Q9zd98 rickettsia
275	6	4.4	253	16	Q9JU35	Q9ju35 neisseria m	353	6	4.4	295	5	O9U5C1	O9usc1 caenorhabdi
276	6	4.4	254	11	Q9DCR0	Q9dcr0 mus musculus	354	6	4.4	296	11	Q9J142	Q9j142 rattus norv
277	6	4.4	255	4	Q9BSW1	Q9bsw1 homo sapien	355	6	4.4	296	16	Q982C8	Q982c8 rhizobium l
278	6	4.4	255	5	Q9VQA0	Q9vqa0 drosophila	356	6	4.4	296	16	Q99R56	Q99r56 staphylococ
279	6	4.4	255	16	Q9ZXP9	Q9zxp9 rhizobium m	357	6	4.4	297	5	O9N333	O9n333 caenorhabdi
280	6	4.4	256	8	Q9TQG6	Q9tqg6 cnemidophor	358	6	4.4	297	13	Q91296	Q91296 rana catesb
281	6	4.4	258	8	Q9TQG5	Q9tqg5 cnemidophor	359	6	4.4	299	12	Q91GC9	Q91gc9 epiphyas po
282	6	4.4	261	4	Q9ULC1	Q9ulc1 homo sapien	360	6	4.4	299	16	Q92VD0	Q92vd0 rhizobium m
283	6	4.4	261	8	Q9TGP4	Q9tgp4 cnemidophor	361	6	4.4	300	4	O9BRS1	O9brs1 homo sapien
284	6	4.4	261	8	Q956Q5	Q956q5 cnemidophor	362	6	4.4	303	16	O06484	O06484 bacillus su
285	6	4.4	261	11	Q9R0H2	Q9r0h2 mus musculus	363	6	4.4	304	16	Q97D67	Q97d67 clostridium
286	6	4.4	263	8	Q9TGP8	Q9tgp8 cnemidophor	364	6	4.4	305	10	Q9SIG0	Q9sig0 arabidopsis
287	6	4.4	263	8	Q9TGP7	Q9tgp7 cnemidophor	365	6	4.4	308	2	O9X9G6	O9x9g6 yersinia ps
288	6	4.4	263	8	Q9TGO9	Q9tgo9 cnemidophor	366	6	4.4	308	4	O9P0E2	O9p0e2 homo sapien
289	6	4.4	264	4	Q9H9Q2	Q9h9q2 homo sapien	367	6	4.4	308	5	O9VTP3	O9vtp3 drosophila
290	6	4.4	264	8	Q9H9G8	Q9h9g8 cnemidophor	368	6	4.4	308	5	O97259	O97259 plasmodium
291	6	4.4	264	10	Q9S0R4	Q9sur4 arabidopsis	369	6	4.4	310	10	O9LXX5	O9lrx5 arabidopsis
292	6	4.4	264	11	Q9CXL5	Q9cxl5 mus musculus	370	6	4.4	310	16	O66656	O66656 aquifex aeo
293	6	4.4	264	11	O88547	O88547 mus musculus	371	6	4.4	310	16	O66656	O66656 aquifex aeo
294	6	4.4	264	11	Q921G4	Q921g4 mus musculus	372	6	4.4	311	2	O9SIQ1	O9siq1 streptomyce
295	6	4.4	265	8	Q35783	Q35783 sorghum bic	373	6	4.4	311	4	O9H7E4	O9h7e4 homo sapien
296	6	4.4	266	8	Q9TGP9	Q9tgp9 cnemidophor	374	6	4.4	311	10	O80628	O80628 arabidopsis
297	6	4.4	266	8	Q9TGO2	Q9tgo2 cnemidophor	375	6	4.4	311	10	O9SA03	O9sa03 arabidopsis
298	6	4.4	266	8	Q9TGO8	Q9tgo8 cnemidophor	376	6	4.4	315	10	Q9SH70	Q9sh70 arabidopsis
299	6	4.4	266	8	Q9TGR3	Q9tgr3 cnemidophor	377	6	4.4	315	17	Q97VK4	Q97vk4 sulfolobus
300	6	4.4	266	11	Q9D1D2	Q9d1d2 mus musculus	378	6	4.4	316	2	O9APD4	O9apd4 chlorellu
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303	6	4.4	267	8	Q9TGO4	Q9tgo4 cnemidophor	381	6	4.4	317	10	Q9LHC2	Q9lhc2 arabidopsis
304	6	4.4	267	8	Q9TGR4	Q9tgr4 cnemidophor							
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307	6	4.4	268	8	Q9TGP5	Q9tgp5 cnemidophor							
308	6	4.4	268	8	Q9TGP6	Q9tgp6 cnemidophor							

382	6	4.4	317	16	Q9I264	Q9I264 pseudomonas	455	6	4.4	374	10	082236	082236 arabidopsis	
383	6	4.4	318	6	Q9BG79	Q9BG79 macaca fasc	456	6	4.4	375	2	Q9AQ57	Q9AQ57 burkholderi	
384	6	4.4	319	11	Q912U0	Q912U0 mus musculus	457	6	4.4	376	5	P91745	P91745 lucilia cup	
385	6	4.4	320	16	Q9HY14	Q9HY14 pseudomonas	458	6	4.4	377	5	O9UL14	O9UL14 drosophila	
386	6	4.4	321	17	O58066	O58066 pyrococcus	459	6	4.4	378	16	Q92LL1	Q92LL1 helicobacte	
387	6	4.4	322	4	Q9H8X5	Q9H8X5 homo sapien	460	6	4.4	379	16	Q9JYU8	Q9JYU8 neisseria m	
388	6	4.4	323	13	Q90XK7	Q90XK7 lepisosteus	461	6	4.4	380	16	Q9JYU0	Q9JYU0 neisseria m	
389	6	4.4	324	13	Q90XL0	Q90XL0 polypterus	462	6	4.4	381	5	O967M9	Q967M9 dryocoeatoid	
390	6	4.4	325	13	Q90XK9	Q90XK9 acipenser s	463	6	4.4	382	11	Q9JL28	Q9JL28 mus musculus	
391	6	4.4	326	13	Q90XK8	Q90XK8 polyodon sp	464	6	4.4	383	11	P97J27	P97J27 mus musculus	
392	6	4.4	327	13	Q90XJ6	Q90XJ6 latimeria m	465	6	4.4	384	11	Q920W5	Q920W5 mus musculus	
393	6	4.4	328	4	Q9NSC1	Q9NSC1 homo sapien	466	6	4.4	385	11	Q920W4	Q920W4 mus spicile	
394	6	4.4	329	13	Q90XK5	Q90XK5 osteoglossu	467	6	4.4	386	5	O16045	O16045 drosophila	
395	6	4.4	330	13	Q90XK3	Q90XK3 gnathonemus	468	6	4.4	387	16	Q92JU6	Q92JU6 rhizobium m	
396	6	4.4	331	13	Q90XK2	Q90XK2 notopterus	469	6	4.4	388	3	O59709	O59709 schizosacch	
397	6	4.4	332	13	Q90XK0	Q90XK0 mugil cepha	470	6	4.4	389	4	O95610	O95610 homo sapien	
398	6	4.4	333	13	Q90XJ8	Q90XJ8 pseudopleur	471	6	4.4	390	10	Q943W4	Q943W4 oryza sativ	
399	6	4.4	334	17	Q97B55	Q97B55 thermoplasma	472	6	4.4	391	16	O67100	O67100 aquifex aeo	
400	6	4.4	335	16	Q9Z7D8	Q9Z7D8 chlamydia p	473	6	4.4	392	17	O96YB1	O96YB1 sulfolobus	
401	6	4.4	336	11	Q9D400	Q9D400 mus musculus	474	6	4.4	393	12	O997H7	O997H7 bovine aden	
402	6	4.4	337	16	Q9KS06	Q9KS06 vibrio chol	475	6	4.4	394	16	Q92JX4	Q92JX4 rhizobium m	
403	6	4.4	338	12	Q983R2	Q983R2 rhizobium l	476	6	4.4	395	4	O9H878	Q9H878 homo sapien	
404	6	4.4	339	5	Q9NFB5	Q9NFB5 plasmodium	477	6	4.4	396	16	Q984H3	Q984H3 rhizobium l	
405	6	4.4	340	10	Q9LL79	Q9LL79 phaseolus v	478	6	4.4	397	13	O9PTU6	Q9PTU6 paralichthy	
406	6	4.4	341	16	Q9FTP8	Q9FTP8 oryza sativ	479	6	4.4	398	10	O9M3Y9	O9M3Y9 citrus sine	
407	6	4.4	342	16	Q9K6D8	Q9K6D8 bacillus ha	480	6	4.4	399	16	Q98H39	Q98H39 rhizobium l	
408	6	4.4	343	11	Q9CSW7	Q9CSW7 mus musculus	481	6	4.4	400	16	Q92T60	Q92T60 rhizobium m	
409	6	4.4	344	12	O11416	O11416 duck adenov	482	6	4.4	401	16	O9HA00	Q9HA00 homo sapien	
410	6	4.4	345	10	Q9WU90	Q9WU90 mus musculus	483	6	4.4	402	4	O9H839	Q9H839 homo sapien	
411	6	4.4	346	15	Q92375	Q92375 bovine immu	484	6	4.4	403	4	O96HU6	Q96HU6 homo sapien	
412	6	4.4	347	2	Q9F5X3	Q9F5X3 bacillus li	485	6	4.4	404	17	O58671	O58671 methanococc	
413	6	4.4	348	3	O43050	O43050 s putative	486	6	4.4	405	16	Q9UGS0	Q9UGS0 homo sapien	
414	6	4.4	349	5	Q9XZJ8	Q9XZJ8 trypanosoma	487	6	4.4	406	16	Q92KZ1	Q92KZ1 rhizobium m	
415	6	4.4	350	2	O67999	O67999 bradyrhizob	488	6	4.4	407	4	O60667	O60667 homo sapien	
416	6	4.4	351	5	Q9VGF3	Q9VGF3 drosophila	489	6	4.4	408	17	O9HIY9	Q9HIY9 thermoplasma	
417	6	4.4	352	16	Q985T4	Q985T4 rhizobium l	490	6	4.4	409	17	O28572	Q98572 archaeoglob	
418	6	4.4	353	10	Q9S2W7	Q9S2W7 arabidopsis	491	6	4.4	410	16	Q97E00	Q97E00 clostridium	
419	6	4.4	354	5	O02230	O02230 caenorhabdi	492	6	4.4	411	392	16	Q92X17	Q92X17 rhizobium m
420	6	4.4	355	10	Q9FRM3	Q9FRM3 oryza sativ	493	6	4.4	412	396	2	O69069	O69069 streptomyce
421	6	4.4	356	16	Q97E56	Q97E56 clostridium	494	6	4.4	413	396	10	Q9LVN3	Q9LVN3 arabidopsis
422	6	4.4	357	5	Q9VYK4	Q9VYK4 drosophila	495	6	4.4	414	398	10	O9SIF8	Q9SIF8 arabidopsis
423	6	4.4	358	8	Q9TE68	Q9TE68 nitzschia f	496	6	4.4	415	399	16	Q9KVA9	Q9KVA9 vibrio chol
424	6	4.4	359	10	Q9FQ23	Q9FQ23 nicotiana t	497	6	4.4	416	399	16	Q98KQ4	Q98KQ4 rhizobium l
425	6	4.4	360	10	Q9LFC7	Q9LFC7 arabidopsis	498	6	4.4	417	400	3	Q96W55	Q96W55 schizosacch
426	6	4.4	361	11	O08563	Q08563 rattus norv	499	6	4.4	418	401	16	O9A5J9	Q9A5J9 caulobacter
427	6	4.4	362	16	Q98841	Q98841 schizophrag	500	6	4.4	419	402	10	O9ATY2	Q9ATY2 trititum ae
428	6	4.4	363	16	Q97169	Q97169 clostridium	501	6	4.4	420	17	Q972H8	Q972H8 sulfolobus	
429	6	4.4	364	17	Q980M3	Q980M3 sulfolobus	502	6	4.4	421	10	Q93YV2	Q93YV2 arabidopsis	
430	6	4.4	365	10	Q947H4	Q947H4 nicotiana t	503	6	4.4	422	403	5	O9XUG2	Q9XUG2 caenorhabdi
431	6	4.4	366	4	O95350	O95350 homo sapien	504	6	4.4	423	404	16	Q9R2B8	Q9R2B8 deinococcus
432	6	4.4	367	11	Q90XF4	Q90XF4 mesocricetu	505	6	4.4	424	405	4	Q9H0P4	Q9H0P4 homo sapien
433	6	4.4	368	3	Q9HD05	Q9HD05 candida rug	506	6	4.4	425	406	4	O96GC9	Q96GC9 homo sapien
434	6	4.4	369	13	O42399	O42399 gallus gall	507	6	4.4	426	406	11	Q99KU0	Q99KU0 mus musculus
435	6	4.4	370	2	O07866	O07866 streptococc	508	6	4.4	427	406	11	O91ZQ0	Q91ZQ0 rattus norv
436	6	4.4	371	4	Q9NSC5	Q9NSC5 homo sapien	509	6	4.4	428	407	2	O9AJF4	Q9AJF4 thermoactin
437	6	4.4	372	2	Q9F720	Q9F720 chlorobium	510	6	4.4	429	408	16	Q9KPB3	Q9KPB3 vibrio chol
438	6	4.4	373	16	Q97N32	Q97N32 clostridium	511	6	4.4	430	16	O51649	O51649 borrelia bu	
439	6	4.4	374	17	Q97V03	Q97V03 pyrococcus	512	6	4.4	431	16	Q9A7L6	Q9A7L6 caulobacter	
440	6	4.4	375	17	Q97295	Q97295 sulfolobus	513	6	4.4	432	16	O926T5	Q926T5 listeria in	
441	6	4.4	376	4	Q96N58	Q96N58 homo sapien	514	6	4.4	433	2	O55042	Q55042 shigella so	
442	6	4.4	377	16	Q99TT7	Q99TT7 staphylococ	515	6	4.4	434	10	O9LXQ7	Q9LXQ7 arabidopsis	
443	6	4.4	378	2	Q9ETH0	Q9ETH0 yersinia pe	516	6	4.4	435	17	O9ARH5	Q9ARH5 oryza sativ	
444	6	4.4	379	3	Q9CLX3	Q9CLX3 schizosacch	517	6	4.4	436	418	2	O9AEG2	Q9AEG2 rhodococcus
445	6	4.4	380	5	Q93570	Q93570 caenorhabdi	518	6	4.4	437	418	2	O93DNO	Q93DNO rhodococcus
446	6	4.4	381	16	Q9WY30	Q9WY30 thermotoga	519	6	4.4	438	418	5	O9VTD9	Q9VTD9 drosophila
447	6	4.4	382	16	O9KOV1	Q9KOV1 neisseria m	520	6	4.4	439	10	O9LJ18	Q9LJ18 arabidopsis	
448	6	4.4	383	5	O62580	O62580 giardia lam	521	6	4.4	440	16	O97RH9	Q97RH9 streptococc	
449	6	4.4	384	4	Q9H954	Q9H954 homo sapien	522	6	4.4	441	16	O97PM3	Q97PM3 streptococc	
450	6	4.4	385	16	Q97H87	Q97H87 clostridium	523	6	4.4	442	16	O9WY82	Q9WY82 thermotoga	
451	6	4.4	386	10	Q9KFL6	Q9KFL6 bacillus ha	524	6	4.4	443	10	O43170	O43170 solanum tub	
452	6	4.4	387	16	O9M899	Q9M899 arabidopsis	525	6	4.4	444	2	O88003	O88003 bordetella	
453	6	4.4	388	17	O73997	O73997 pyrococcus	526	6	4.4	445	428	2	O9LOV8	Q9LOV8 streptomyce
454	6	4.4	389	4	O14580	O14580 homo sapien	527	6	4.4	446	428	2	O45374	O45374 bordetella

528	6	4.4	428	6	Q95JP3	Q95jp3 macaca fasc	601	5	Q24675	Q24675 drosophila
529	6	4.4	429	10	Q9LH89	Q9lh89 arbidopsi	602	5	Q24676	Q24676 drosophila
530	6	4.4	428	2	Q93A75	Q93a75 salmonella	603	5	Q27923	Q27923 drosophila
531	6	4.4	429	10	Q9ZQ17	Q9zqi7 arbidopsi	604	5	Q9NK25	Q9nk25 drosophila
532	6	4.4	429	10	Q24419	Q24419 myristica f	605	5	Q9NK24	Q9nk24 drosophila
533	6	4.4	429	16	Q92VZ1	Q92vz1 rhizobium m	606	5	Q9NK23	Q9nk23 drosophila
534	6	4.4	430	4	Q9NT83	Q9nt83 homo sapien	607	5	Q9NK22	Q9nk22 drosophila
535	6	4.4	431	10	Q9SB49	Q9sb49 arbidopsi	608	5	Q9NK21	Q9nk21 drosophila
536	6	4.4	431	10	Q23847	Q23847 brassica ca	609	5	Q9NK20	Q9nk20 drosophila
537	6	4.4	432	16	Q98EM1	Q98em1 rhizobium l	610	5	Q9NKY9	Q9nky9 drosophila
538	6	4.4	432	16	Q98EM1	Q98em1 rhizobium l	610	5	Q9NKY9	Q9nky9 drosophila
539	6	4.4	436	10	Q9AR01	Q9ar01 oryza sativ	611	5	Q9NKY8	Q9nky8 drosophila
540	6	4.4	437	2	Q9S0Y5	Q9s0y5 plesiomonas	612	5	Q9NKY7	Q9nky7 drosophila
541	6	4.4	437	2	Q9LI95	Q9li95 streptomyce	613	5	Q9NKY6	Q9nky6 drosophila
542	6	4.4	437	2	Q9S0U5	Q9s0u5 shigella so	614	5	Q9NKY5	Q9nky5 drosophila
543	6	4.4	439	2	Q48350	Q48350 staphylococ	615	5	Q9NKY5	Q9nky5 drosophila
544	6	4.4	439	16	Q99OB6	Q99ob6 staphylococ	616	5	Q9NK67	Q9nk67 drosophila
545	6	4.4	441	2	Q9LG14	Q9lg14 arbidopsi	617	5	Q9NK65	Q9nk65 drosophila
546	6	4.4	441	2	Q9X990	Q9x990 streptococc	618	5	Q9BH74	Q9bh74 drosophila
547	6	4.4	444	16	Q9AB46	Q9ab46 caulobacter	619	5	Q9BN01	Q9bn01 drosophila
548	6	4.4	445	2	Q9F695	Q9f695 aquifex aeo	620	5	Q9BN00	Q9bn00 drosophila
549	6	4.4	445	5	Q9VLG9	Q9vlg9 drosophila	621	5	Q9GRF6	Q9grf6 drosophila
550	6	4.4	447	16	Q97LX5	Q97lx5 clostridium	622	5	Q23834	Q23834 drosophila
551	6	4.4	448	2	Q24842	Q24842 acinetobact	623	5	Q9LG23	Q9lg23 oryza sativ
552	6	4.4	451	5	Q24748	Q24748 drosophila	624	5	Q9I0Y0	Q9i0y0 pseudomonas
553	6	4.4	451	15	Q90CT9	Q90ct9 human immun	625	5	Q960C6	Q960c6 drosophila
554	6	4.4	451	16	Q9HXP8	Q9hxf8 pseudomonas	626	5	Q926C8	Q926c8 rhizobium m
555	6	4.4	453	4	Q9C073	Q9c073 homo sapien	627	5	Q98KJ1	Q98kj1 rhizobium l
556	6	4.4	453	16	Q57436	Q57436 aquifex aeo	628	5	Q9QB02	Q9qb02 hyphantria
557	6	4.4	454	10	Q9XI59	Q9xi59 arbidopsi	629	5	Q9YW96	Q9yw96 epiphyas po
558	6	4.4	455	5	Q9VJ28	Q9vj28 drosophila	630	5	Q52774	Q52774 myxococcus
559	6	4.4	455	10	Q9CA34	Q9ca34 arbidopsi	631	5	Q02306	Q02306 caenorhabdi
560	6	4.4	455	11	Q9RLK7	Q9rlk7 mus musculu	632	5	Q11450	Q11450 anagrapha f
561	6	4.4	456	10	Q93ZH8	Q93zh8 arbidopsi	633	5	Q9X9U1	Q9x9u1 streptomyce
562	6	4.4	456	16	Q9RC87	Q9rc87 bacillus ha	634	5	Q35664	Q35664 mus musculu
563	6	4.4	457	2	Q9P637	Q9p637 rhodobacter	635	5	Q92325	Q92325 mus musculu
564	6	4.4	461	2	Q9LAE5	Q9lae5 nostoc punc	636	5	Q95029	Q95029 tetrahymena
565	6	4.4	464	10	Q94EA9	Q94ea9 oryza sativ	637	5	Q96VP9	Q96vp9 glomus intr
566	6	4.4	466	4	Q9H9B2	Q9h9b2 homo sapien	638	5	Q93LX5	Q93lx5 streptomyce
567	6	4.4	468	5	Q9BMH3	Q9bmh3 ichtyophth	639	5	Q77213	Q77213 drosophila
568	6	4.4	469	10	Q9S7D8	Q9s7d8 arbidopsi	640	5	Q9VZA1	Q9vza1 drosophila
569	6	4.4	469	10	Q9T065	Q9t065 arbidopsi	641	5	Q99QY7	Q99qy7 staphylococ
570	6	4.4	469	16	Q66887	Q66887 aquifex aeo	642	5	Q9LCR4	Q9lcr4 paenibacill
571	6	4.4	470	8	Q37001	Q37001 arbidopsi	643	5	Q65336	Q65336 autographa
572	6	4.4	470	10	Q49537	Q49537 arbidopsi	644	5	Q92483	Q92483 bombyx mori
573	6	4.4	471	10	Q9ZN29	Q9zn29 brassica ju	645	5	Q9C1K5	Q9c1k5 lactococcus
574	6	4.4	471	10	Q94GA4	Q94ga4 lycopersico	646	5	Q9W273	Q9w273 drosophila
575	6	4.4	472	16	Q9I0V9	Q9i0v9 pseudomonas	647	5	Q9N8K9	Q9n8k9 trypanosoma
576	6	4.4	472	16	Q92NT7	Q92nt7 rhizobium m	648	5	Q97O84	Q97o84 streptococc
577	6	4.4	475	10	Q23314	Q23314 arbidopsi	649	5	Q84053	Q84053 chlamydia t
578	6	4.4	475	16	Q98GH7	Q98gh7 rhizobium l	650	5	Q96CX0	Q96cx0 homo sapien
579	6	4.4	476	10	Q9ZUK2	Q9zuk2 arbidopsi	651	5	Q975V2	Q975v2 sulfolobus
580	6	4.4	476	13	Q91940	Q91940 xiphophorus	652	5	Q9DBG2	Q9dbg2 mus musculu
581	6	4.4	478	2	Q93CS2	Q93cs2 shigella bo	653	5	Q99MN9	Q99mn9 mus musculu
582	6	4.4	480	5	Q09973	Q09973 caenorhabdi	654	5	Q99YJ6	Q99yj6 streptococc
583	6	4.4	481	2	Q87729	Q87729 vibrio algi	655	5	Q9BW03	Q9bw03 homo sapien
584	6	4.4	481	16	Q9KV07	Q9kvu7 vibrio chol	656	5	Q9UJ56	Q9uj56 homo sapien
585	6	4.4	484	10	Q9SIN9	Q9sin9 arbidopsi	657	5	Q9JWD7	Q9jwd7 neisseria m
586	6	4.4	486	12	Q919G4	Q919g4 blueberry r	658	5	Q985V5	Q985v5 rhizobium l
587	6	4.4	486	16	Q9RXH9	Q9rxh9 deinococcus	659	5	Q9U6X2	Q9u6x2 onchocerca
588	6	4.4	486	16	Q98AF9	Q98af9 rhizobium l	660	5	Q9LIN9	Q9lin9 arbidopsi
589	6	4.4	487	10	Q9SSZ0	Q9ssz0 trifolium l	661	5	Q9NUM8	Q9num8 homo sapien
590	6	4.4	489	3	Q06266	Q06266 saccharomyc	662	5	Q9BTC0	Q9btc0 homo sapien
591	6	4.4	489	9	Q9MBM1	Q9mbm1 phage gify	663	5	Q90038	Q90038 sabia virus
592	6	4.4	489	10	Q9LRB4	Q9lrb4 arbidopsi	664	5	Q9CS57	Q9cs57 mus musculu
593	6	4.4	489	10	Q9LSJ9	Q9lsj9 arbidopsi	665	5	Q92736	Q92736 cowpox viru
594	6	4.4	491	10	Q9SLJ8	Q9slj8 arbidopsi	666	5	Q9W273	Q9w273 synecocyst
595	6	4.4	491	10	Q944S5	Q944s5 arbidopsi	667	5	Q9RCW5	Q9rcw5 deinococcus
596	6	4.4	492	3	Q08966	Q08966 saccharomyc	668	5	Q04843	Q04843 triticum ae
597	6	4.4	493	16	Q55722	Q55722 synecocyst	669	5	Q04843	Q04843 triticum ae
598	6	4.4	494	5	Q23932	Q23932 drosophila	670	5	Q90408	Q90408 arbidopsi
599	6	4.4	494	5	Q24642	Q24642 drosophila	671	5	Q08650	Q08650 arbidopsi
600	6	4.4	494	5	Q24643	Q24643 drosophila	672	5	Q93X73	Q93x73 malus domes
							673	5	Q97J99	Q97j99 clostridium
							674	5	Q19594	Q19594 caenorhabdi

674	6	4.4	572	16	Q92KT1	Q92kt1 rhizobium m	747	6	4.4	693	10	Q82802	Q82802 nicotiana t
675	6	4.4	580	10	Q43540	Q43540 liliun long	748	6	4.4	693	12	Q69090	Q69090 human herpe
676	6	4.4	581	5	Q9VNW4	Q9vnw4 drosophila	749	6	4.4	695	16	Q9CH87	Q9ch87 lactococcus
677	6	4.4	582	4	Q9NSP8	Q9nsp8 homo sapien	750	6	4.4	696	13	Q9DGF5	Q9d9f5 cynops pyrr
678	6	4.4	585	10	Q9LGG1	Q9l9l1 oryza sativ	751	6	4.4	699	5	Q25987	Q25987 plasmodium
679	6	4.4	588	10	Q9MA86	Q9ma86 arabidopsis	752	6	4.4	702	5	Q9BNX6	Q9bnx6 endeis laev
680	6	4.4	591	11	Q9JI49	Q9ji49 rattus norv	753	6	4.4	703	5	Q9BNM2	Q9bnm2 milnesium t
681	6	4.4	596	5	Q45633	Q45633 caenorhabdi	754	6	4.4	706	10	Q41343	Q41343 lycopersico
682	6	4.4	598	10	Q65435	Q65435 arabidopsis	755	6	4.4	712	4	Q9H0E7	Q9h0e7 homo sapien
683	6	4.4	599	2	Q93CJ2	Q93cj2 anabaena va	756	6	4.4	715	5	Q76728	Q76728 trypanosoma
684	6	4.4	602	16	Q98LA1	Q98la1 rhizobium l	757	6	4.4	715	13	Q98SP7	Q98sp7 brachydanio
685	6	4.4	603	16	Q9A313	Q9a313 caulobacter	758	6	4.4	716	10	Q94826	Q94826 solanum tub
686	6	4.4	604	17	Q9VON3	Q9von3 pyrococcus	759	6	4.4	719	10	Q9ST49	Q9st49 zea mays m
687	6	4.4	606	10	Q9FIW8	Q9fiw8 arabidopsis	760	6	4.4	720	10	Q9LVV0	Q9lvv0 arabidopsis
688	6	4.4	607	5	Q9GZF2	Q9gzf2 caenorhabdi	761	6	4.4	720	10	Q50027	Q50027 lycopersico
689	6	4.4	613	10	Q49231	Q49231 brassica ol	762	6	4.4	725	5	Q9VEG6	Q9veg6 drosophila
690	6	4.4	613	10	Q38846	Q38846 arabidopsis	763	6	4.4	725	10	Q9ZU35	Q9zu35 arabidopsis
691	6	4.4	614	11	Q9WV00	Q9wv00 mus musculu	764	6	4.4	725	10	Q9ASR9	Q9asr9 arabidopsis
692	6	4.4	615	5	Q9W232	Q9w232 drosophila	765	6	4.4	726	5	Q9BNX9	Q9bnx9 armadillidi
693	6	4.4	618	17	Q9V0S9	Q9v0s9 pyrococcus	766	6	4.4	726	5	Q9BNX7	Q9bnx7 eumesocampa
694	6	4.4	621	10	Q9FWK6	Q9fwk6 oryza sativ	767	6	4.4	726	5	Q9BNX2	Q9bnx2 mastigoprocc
695	6	4.4	621	10	Q9XH51	Q9xh51 oryza sativ	768	6	4.4	726	5	Q9BNX1	Q9bnx1 nipponopsal
696	6	4.4	625	2	Q9FD94	Q9fd94 azospirillu	769	6	4.4	726	5	Q9BNX0	Q9bnx0 unidentified
697	6	4.4	625	10	Q9ZW70	Q9zw70 arabidopsis	770	6	4.4	726	5	Q9BNW4	Q9bnw4 tanystylum
698	6	4.4	628	10	Q24640	Q24640 rumex palus	771	6	4.4	727	5	Q9BNW8	Q9bnw8 scutigerell
699	6	4.4	630	10	Q24608	Q24608 dianthus ca	772	6	4.4	727	5	Q9BNW0	Q9bnw0 peripatus s
700	6	4.4	630	16	Q9HT09	Q9ht09 pseudomonas	773	6	4.4	728	5	Q9BNW7	Q9bnw7 scolopendra
701	6	4.4	631	10	Q49043	Q49043 dianthus ca	774	6	4.4	729	13	Q90738	Q90738 gallus gall
702	6	4.4	633	5	Q9BNY0	Q9bny0 artemia sal	775	6	4.4	729	13	Q90971	Q90971 gallus gall
703	6	4.4	633	5	Q9BNX8	Q9bnx8 semibalanus	776	6	4.4	730	3	Q9C2E3	Q9c2e3 neuropeptora
704	6	4.4	633	5	Q9BNX3	Q9bnx3 machiloides	777	6	4.4	730	4	Q9HBV1	Q9hbv1 homo sapien
705	6	4.4	633	10	Q949H6	Q949h6 fragaria an	778	6	4.4	732	2	Q9RH03	Q9rh03 azospirillu
706	6	4.4	634	10	Q9FPP3	Q9fpp3 carica papa	779	6	4.4	733	13	Q73897	Q73897 gallus gall
707	6	4.4	634	10	Q9ZSW4	Q9zsw4 citrus sine	780	6	4.4	735	10	Q49230	Q49230 brassica ol
708	6	4.4	635	10	Q49153	Q49153 pisum sativ	781	6	4.4	736	10	Q49187	Q49187 lycopersico
709	6	4.4	635	10	Q65871	Q65871 pisum sativ	782	6	4.4	738	10	Q49829	Q49829 nicotiana t
710	6	4.4	636	10	Q9ZSQ0	Q9zsq0 phaseolus a	783	6	4.4	738	10	Q9M7M1	Q9m7m1 prunus pers
711	6	4.4	637	5	Q9BNW6	Q9bnw6 speleonecte	784	6	4.4	738	17	Q96X85	Q96x85 sulfolobus
712	6	4.4	637	10	Q49077	Q49077 cucumis mel	785	6	4.4	739	10	Q9M5L8	Q9m5l8 mangifera i
713	6	4.4	637	10	Q9ZWL5	Q9zwl5 passiflora	786	6	4.4	740	10	Q82436	Q82436 cucumis mel
714	6	4.4	637	10	Q9SSY5	Q9ssy5 cucumis sat	787	6	4.4	740	10	Q9SSY6	Q9ssy6 cucumis sat
715	6	4.4	642	4	Q9H1B8	Q9h1b8 homo sapien	788	6	4.4	740	10	Q9SH20	Q9sh20 arabidopsis
716	6	4.4	644	5	Q9GV90	Q9gv90 caenorhabdi	789	6	4.4	740	10	Q9XH58	Q9xh58 pelargonium
717	6	4.4	646	5	Q965T6	Q965t6 caenorhabdi	790	6	4.4	741	10	Q81122	Q81122 malus domes
718	6	4.4	647	16	Q84627	Q84627 chlamydia t	791	6	4.4	741	10	Q9XH57	Q9xh57 pelargonium
719	6	4.4	649	4	Q96CR4	Q96cr4 homo sapien	792	6	4.4	741	10	Q9M506	Q9m506 vitis vinif
720	6	4.4	649	16	Q9CMF2	Q9cmf2 pasteurella	793	6	4.4	741	10	Q949H7	Q949h7 fragaria an
721	6	4.4	654	16	Q9HYF0	Q9hyf0 pseudomonas	794	6	4.4	742	4	Q9H6E6	Q9h6e6 homo sapien
722	6	4.4	656	5	Q9BNW1	Q9bnw1 nereis vire	795	6	4.4	743	5	Q17305	Q17305 caenorhabdi
723	6	4.4	656	10	Q9FVM7	Q9fvm7 triticum ae	796	6	4.4	743	13	Q98SJ5	Q98sj5 brachydanio
724	6	4.4	656	16	Q9KNX4	Q9knx4 vibrio chol	797	6	4.4	746	2	Q9ZFD7	Q9zfd7 riftia pach
725	6	4.4	658	5	Q9BNX5	Q9bnx5 hutchinsoni	798	6	4.4	746	5	Q9N2V2	Q9n2v2 caenorhabdi
726	6	4.4	658	5	Q9BNX4	Q9bnx4 limulus pol	799	6	4.4	749	2	Q9KZ05	Q9kz05 streptomyce
727	6	4.4	658	5	Q9BNW5	Q9bnw5 tomocerus s	800	6	4.4	753	10	Q94723	Q94723 oryza sativ
728	6	4.4	660	5	Q9BNW9	Q9bnw9 polyxenus f	801	6	4.4	754	4	Q15310	Q15310 homo sapien
729	6	4.4	662	5	Q44832	Q44832 caenorhabdi	802	6	4.4	754	10	Q41342	Q41342 lycopersico
730	6	4.4	664	4	Q9Z541	Q9z541 homo sapien	803	6	4.4	754	10	Q49186	Q49186 lycopersico
731	6	4.4	664	12	Q9CM12	Q9cm12 littie cher	804	6	4.4	756	10	Q9LPD1	Q9lpd1 arabidopsis
732	6	4.4	666	2	Q9JRN9	Q9jrn9 actinobacil	805	6	4.4	759	5	Q9NTG9	Q9ntg9 tetrahymena
733	6	4.4	669	10	Q81291	Q81291 arabidopsis	806	6	4.4	761	5	Q46336	Q46336 trichomonas
734	6	4.4	672	10	Q9LPA0	Q9lpa0 arabidopsis	807	6	4.4	762	5	Q46337	Q46337 trichomonas
735	6	4.4	677	16	Q9RSS3	Q9rss3 deinococcus	808	6	4.4	763	2	Q9R6Y7	Q9r6y7 anabaena sp
736	6	4.4	680	2	Q9S2C9	Q9s2c9 streptomyce	809	6	4.4	771	16	Q06359	Q06359 mycobacteri
737	6	4.4	683	2	Q00620	Q00620 pseudomonas	810	6	4.4	774	5	Q9U2T1	Q9u2t1 caenorhabdi
738	6	4.4	683	12	Q9QKD0	Q9qkd0 hyposoter d	811	6	4.4	774	5	Q9NE97	Q9ne97 leishmania
739	6	4.4	686	5	Q45255	Q45255 caenorhabdi	812	6	4.4	776	17	Q27582	Q27582 methanother
740	6	4.4	687	3	Q12407	Q12407 saccharomyc	813	6	4.4	777	11	Q60472	Q60472 cavia porce
741	6	4.4	687	11	Q9JU08	Q9jj08 rattus norv	814	6	4.4	778	16	Q25721	Q25721 helicobacte
742	6	4.4	688	4	Q96B69	Q96b69 homo sapien	815	6	4.4	778	16	Q9ZM86	Q9zm86 helicobacte
743	6	4.4	690	10	Q9FX17	Q9fx17 arabidopsis	816	6	4.4	780	11	Q9B5V5	Q9b5v5 mus musculu
744	6	4.4	691	16	Q07430	Q07430 mycobacteri	817	6	4.4	782	10	Q9SAU6	Q9sau6 abies grand
745	6	4.4	691	16	Q98PS5	Q98ps5 mycoplasma	818	6	4.4	783	10	Q9LFG1	Q9lfg1 arabidopsis
746	6	4.4	692	10	Q24569	Q24569 zea mays (m	819	6	4.4	783	12	Q9WJ22	Q9wj22 ophiostoma

820	6	4.4	784	2	O86858	O86858 streptomyc	893	6	4.4	362	12	Q9B08	Q9eb08 sesbania mo
821	6	4.4	792	10	O64769	O64769 arabidopsis	894	6	4.4	963	10	Q9ASH9	Q9ash9 oryza sativ
822	6	4.4	792	11	Q91YM8	Q91ym8 mus musculu	895	6	4.4	966	2	Q52932	Q52932 rhizobium m
823	6	4.4	792	16	O83999	O83999 treponema p	896	6	4.4	971	2	Q56407	Q56407 listeria m
824	6	4.4	795	4	Q9H2G7	Q9h2g7 homo sapien	897	6	4.4	971	3	Q9UUM2	Q9uum2 schizosacch
825	6	4.4	798	11	O54795	O54795 mus musculu	898	6	4.4	971	5	Q9XVS4	Q9xvs4 caenorhabdi
826	6	4.4	798	11	O88411	O88411 mus musculu	899	6	4.4	988	11	Q9EON5	Q9eqn5 rattus norv
827	6	4.4	801	4	Q969U4	Q969u4 homo sapien	900	6	4.4	989	10	Q9SCM5	Q9scm5 arabidopsis
828	6	4.4	806	4	Q9H5K1	Q9h5k1 homo sapien	901	6	4.4	997	4	Q9R3P9	Q9r3p9 homo sapien
829	6	4.4	806	4	Q96GN6	Q96gn6 homo sapien	902	6	4.4	998	17	Q96Z52	Q96z52 ulreaplasma
830	6	4.4	808	4	Q96CQ7	Q96cq7 homo sapien	903	6	4.4	1003	16	Q9PQ01	Q9pq01 ureaplasma
831	6	4.4	809	6	Q9BE30	Q9be30 macaca fasc	904	6	4.4	1009	10	Q9W2T8	Q9w2t8 arabidopsis
832	6	4.4	811	5	Q917545	Q917545 caenorhabdi	905	6	4.4	1011	5	Q9V148	Q9v148 drosophila
833	6	4.4	815	13	Q90917	Q90917 gallus galli	906	6	4.4	1016	5	Q9VM73	Q9vm73 drosophila
834	6	4.4	816	10	Q94FW2	Q94fw2 abies grand	907	6	4.4	1018	10	Q9LSX6	Q9lsx6 arabidopsis
835	6	4.4	817	10	O81086	O81086 abies grand	908	6	4.4	1023	5	Q9XFD4	Q9xyd4 dictyosteli
836	6	4.4	820	11	Q9DBX3	Q9dbx3 mus musculu	909	6	4.4	1025	10	Q9FHL2	Q9flh2 arabidopsis
837	6	4.4	825	10	Q9MBB4	Q9mbb4 pisum sativ	910	6	4.4	1027	4	Q9BR70	Q9br70 homo sapien
838	6	4.4	831	4	Q9P212	Q9p212 homo sapien	911	6	4.4	1027	10	Q9ZRQ2	Q9zrq2 arabidopsis
839	6	4.4	833	11	Q9QUM7	Q9qum7 mus musculu	912	6	4.4	1028	4	O15042	O15042 homo sapien
840	6	4.4	834	10	Q9X106	Q9x1q6 mus musculu	913	6	4.4	1032	5	O61207	O61207 caenorhabdi
841	6	4.4	834	10	Q93X19	Q93x19 solanum tub	914	6	4.4	1035	16	O25887	O25887 helicobacte
842	6	4.4	834	10	Q93W18	Q93w18 solanum tub	915	6	4.4	1036	4	Q96CC1	Q96cc1 homo sapien
843	6	4.4	835	5	Q9BQC7	Q9bqc7 homo sapien	916	6	4.4	1042	5	Q9W777	Q9w777 drosophila
844	6	4.4	837	10	Q949H4	Q949h4 glycine max	917	6	4.4	1046	11	Q91Y38	Q91y38 mus musculu
846	6	4.4	837	17	O26179	O26179 methanother	918	6	4.4	1047	4	O60284	O60284 homo sapien
847	6	4.4	839	4	Q9UP83	Q9up83 homo sapien	919	6	4.4	1047	5	O22985	O22985 caenorhabdi
848	6	4.4	841	5	Q95UT8	Q95ut8 monosiga br	920	6	4.4	1053	10	Q9FXK8	Q9fxk8 lycopersico
849	6	4.4	843	3	O94479	O94479 schizosacch	921	6	4.4	1057	13	O13033	O13033 brachydanio
850	6	4.4	844	5	O9BME7	Q9bme7 aedes aegyp	922	6	4.4	1058	10	O80386	O80386 arabidopsis
851	6	4.4	844	5	Q95P39	Q95p39 aedes aegyp	923	6	4.4	1059	5	Q9W3X6	Q9w3x6 drosophila
852	6	4.4	845	12	Q9YU15	Q9yu15 infectious	924	6	4.4	1061	13	Q9W699	Q9w699 fugu rubrip
853	6	4.4	845	12	O82732	O82732 infectious	925	6	4.4	1064	10	Q9MAU0	Q9mau0 arabidopsis
854	6	4.4	847	5	O19930	Q19930 caenorhabdi	926	6	4.4	1079	16	Q9KM58	Q9km58 vibrio chol
855	6	4.4	849	10	Q9C7M2	Q9c7m2 arabidopsis	927	6	4.4	1083	4	O15386	O15386 homo sapien
856	6	4.4	849	10	Q949M6	Q949m6 arabidopsis	928	6	4.4	1085	4	O9Y4D1	O9y4d1 homo sapien
857	6	4.4	851	4	Q9UMP2	Q9ump2 homo sapien	929	6	4.4	1087	5	O22490	O22490 caenorhabdi
858	6	4.4	853	17	O26651	O26651 methanother	930	6	4.4	1088	5	Q9NSY6	Q9nsy6 caenorhabdi
859	6	4.4	855	10	O50024	O50024 lycopersico	931	6	4.4	1101	10	Q9FWL8	Q9fwl8 oryza sativ
860	6	4.4	856	11	O62121	O62121 mus musculu	932	6	4.4	1102	10	Q9LVP0	Q9lvp0 arabidopsis
861	6	4.4	856	17	O58565	O58565 pyrococcus	933	6	4.4	1119	5	Q9V532	Q9v532 drosophila
862	6	4.4	857	11	O91XN5	O91xn5 rattus norv	934	6	4.4	1124	10	O49318	O49318 arabidopsis
863	6	4.4	858	11	O60423	O60423 cricetus	935	6	4.4	1139	5	O76601	O76601 caenorhabdi
864	6	4.4	859	10	Q9FW70	Q9fw70 oryza sativ	936	6	4.4	1141	16	Q99W46	Q99w46 staphylococ
865	6	4.4	864	11	Q9DBB4	Q9dbb4 mus musculu	937	6	4.4	1141	16	Q932F7	Q932f7 staphylococ
866	6	4.4	865	6	Q95LL1	Q95ll1 macaca fasc	938	6	4.4	1149	4	Q13577	Q13577 homo sapien
867	6	4.4	869	2	Q9ZIX2	Q9zix2 pseudoalter	939	6	4.4	1150	3	O43052	O43052 schizosacch
868	6	4.4	869	16	Q97119	Q97119 clostridium	940	6	4.4	1151	5	O18158	O18158 caenorhabdi
869	6	4.4	870	10	Q9SUC1	Q9suc1 arabidopsis	941	6	4.4	1166	2	O86489	O86489 staphylococ
870	6	4.4	875	3	Q96WP8	Q96wp8 aspergillus	942	6	4.4	1171	2	O9KWX6	O9kwx6 staphylococ
871	6	4.4	875	10	Q41008	Q41008 pisum sativ	943	6	4.4	1183	5	Q960J6	Q960j6 drosophila
872	6	4.4	881	5	Q9NE42	Q9ne42 leishmania	944	6	4.4	1207	5	Q21535	Q21535 caenorhabdi
873	6	4.4	884	12	O66658	O66658 equine herp	945	6	4.4	1209	5	Q21667	Q21667 caenorhabdi
874	6	4.4	886	2	O68973	O68973 synchococc	946	6	4.4	1217	10	Q9XGM3	Q9xgm3 arabidopsis
875	6	4.4	890	3	O60040	O60040 ajellomyces	947	6	4.4	1217	10	Q9SCX7	Q9scx7 arabidopsis
876	6	4.4	890	10	Q9LQ11	Q9lql1 arabidopsis	948	6	4.4	1217	10	Q9SCX6	Q9scx6 arabidopsis
877	6	4.4	898	5	Q9W410	Q9w410 drosophila	949	6	4.4	1217	15	Q9WS53	Q9ws53 simian t-ce
878	6	4.4	903	6	Q9GLX5	Q9gly5 oryctolagus	950	6	4.4	1221	5	O45796	O45796 caenorhabdi
879	6	4.4	909	16	Q98C21	Q98c21 rhizobium l	951	6	4.4	1224	5	Q9Y152	Q9y152 drosophila
880	6	4.4	917	11	O54892	O54892 rattus norv	952	6	4.4	1229	10	Q9SY12	Q9sy12 arabidopsis
881	6	4.4	918	5	Q9VT19	Q9vt19 drosophila	953	6	4.4	1229	10	O49749	O49749 arabidopsis
882	6	4.4	933	5	Q9BL41	Q9bl41 caenorhabdi	954	6	4.4	1232	10	O23998	O23998 hordeum vul
883	6	4.4	934	2	Q9K452	Q9k452 streptomyc	955	6	4.4	1245	16	Q915W1	Q915w1 pseudomonas
884	6	4.4	938	4	Q9NSQ3	Q9nsq3 homo sapien	956	6	4.4	1248	5	Q9NGK5	Q9ngk5 drosophila
885	6	4.4	950	12	Q91163	Q91163 regina rana	957	6	4.4	1253	2	Q93HF9	Q93hf9 streptomyc
886	6	4.4	955	5	Q95PB9	Q95pb9 aedes aegyp	958	6	4.4	1258	4	O15357	O15357 homo sapien
887	6	4.4	955	5	Q95P62	Q95p62 aedes aegyp	959	6	4.4	1260	5	Q9U2M1	Q9u2m1 caenorhabdi
888	6	4.4	957	5	Q9W2N6	Q9w2n6 drosophila	960	6	4.4	1270	13	Q9PWF5	Q9pwf5 morone saxa
889	6	4.4	957	11	Q9EPA0	Q9epa0 rattus norv	961	6	4.4	1278	10	Q9AV65	Q9av65 oryza sativ
890	6	4.4	961	10	Q9ZQC2	Q9zqc2 arabidopsis	962	6	4.4	1283	5	Q9VFI1	Q9vfi1 drosophila
891	6	4.4	962	12	O72157	O72157 southern be	963	6	4.4	1285	10	Q9LGX1	Q9lgx1 oryza sativ
892	6	4.4	962	12	O72159	O72159 southern be	965	6	4.4	1304	13	Q9PWF6	Q9pwf6 morone saxa
										1313	4	Q9C0C9	Q9c0c9 homo sapien

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966 6 4.4 1317 16 Q91181
967 6 4.4 1337 5 Q9Y008
968 6 4.4 1338 3 Q60030
969 6 4.4 1342 5 Q97364
970 6 4.4 1345 5 Q9VP12
971 6 4.4 1346 5 Q45699
972 6 4.4 1370 11 Q9ESB8
973 6 4.4 1388 4 Q9BYU8
974 6 4.4 1396 5 Q9NCE5
975 6 4.4 1398 1 Q9P911
976 6 4.4 1422 5 Q00914
977 6 4.4 1427 5 Q9VPQ0
978 6 4.4 1433 10 Q23588
979 6 4.4 1437 4 Q9BZ95
980 6 4.4 1437 4 Q9BYU9
981 6 4.4 1438 3 Q06681
982 6 4.4 1450 11 Q54728
983 6 4.4 1452 5 Q9VT22
984 6 4.4 1455 5 Q17012
985 6 4.4 1455 5 Q965E3
986 6 4.4 1459 17 Q977Z6
987 6 4.4 1463 5 Q44384
988 6 4.4 1470 5 Q9VR74
989 6 4.4 1487 11 Q03626
990 6 4.4 1495 4 Q9P2K8
991 6 4.4 1495 11 P70587
992 6 4.4 1506 10 Q9CA14
993 6 4.4 1512 5 Q9UIU7
994 6 4.4 1523 2 Q93HI0
995 6 4.4 1537 4 Q96NW7
996 6 4.4 1539 10 Q41813
997 6 4.4 1558 5 Q96275
998 6 4.4 1560 4 Q43177
999 6 4.4 1570 11 Q9ESB6
1000 6 4.4 1604 13 Q90662

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ALIGNMENTS

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RESULT 1
P78451 ID P78451 PRELIMINARY; PRT; 167 AA.
AC P78451:
DT 01-MAY-1997 (TREMBLrel. 03, Created)
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE SOMATONAMOTROPIN (CHORIONIC SOMATONAMOTROPIN) (HCS) (FRAGMENT).
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=7807161; PubMed=593368;
RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
RT "Construction and analysis of recombinant DNA for human chorionic
sonatomamototropin."
RL Nature 270:494-499(1977).
RN [2]
RP SEQUENCE OF 110-167 FROM N.A.
RX MEDLINE=78160787; PubMed=611657;
RA Seeburg P.H., Shine J., Martial J.A., Ullrich A., Goodman H.M.,
RA Baxter J.D.;
RT "Nucleotide sequence of a human gene coding for a polypeptide
hormone."
RL Trans. Assoc. Am. Physicians 90:109-116(1977).
DR EMBL; V00593; CAA23840.1; -.
DR EMBL; M25118; AAA35721.1; -.
DR HSSP; P01241; 1A22.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.

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DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
KW PROSITE; PS00338; SOMATOTROPIN_2; 1.
FT CHORION.
FT NON_TER 1
SQ SEQUENCE 167 AA; 19586 MW; 6EC7829D3938E976 CRC64;

Query Match 58.5%; Score 79; DB 4; Length 167;
Best Local Similarity 100.0%; Pred. No. 1.9e-74;
Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 55 FDSIPTPSNMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHL 114
Db 30 FDSIPTPSNMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHL 89
QY 115 LKDLLEGIGIOTLMGRLEDGS 133
Db 90 LKDLLEGIGIOTLMGRLEDGS 108

RESULT 2
Q14407 ID Q14407 PRELIMINARY; PRT; 217 AA.
AC Q14407:
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE CHORIONIC SOMATONAMOTROPIN CS-2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
evolution."
RL Genomics 4:479-497(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=91102558; PubMed=1980158;
RA Vnencak-Jones C.L., Phillips J.A. III.;
RT "Hot spots for growth hormone gene deletions in homologous regions
outside of Alu repeats."
RL Science 250:1745-1748(1990).
DR EMBL; J03071; AAA52553.1; -.
DR HSSP; P01241; 1A22.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 24994 MW; 39FAACDDB6B2E951 CRC64;

Query Match 58.5%; Score 79; DB 4; Length 217;
Best Local Similarity 100.0%; Pred. No. 2.4e-74;
Matches 79; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 55 FDSIPTPSNMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHL 114
Db 80 FDSIPTPSNMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHL 139
QY 115 LKDLLEGIGIOTLMGRLEDGS 133
Db 140 LKDLLEGIGIOTLMGRLEDGS 158

RESULT 3
Q14406 ID Q14406 PRELIMINARY; PRT; 199 AA.

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AC Q14406;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE CHORIONIC SOMATOMAMOTROPIN CS-5.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelin R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=91102558; PubMed=1980158;
RA Vnencak-Jones C.L., Phillips J.A. III.;
RT "Hot spots for growth hormone gene deletions in homologous regions
RT outside of Alu repeats.";
RL Science 250:1745-1748(1990).
DR EMBL; J03071; AAA52550.1; -.
DR HSSP; P01241; 1A22.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 199 AA; 22649 MW; 119656E87AFD55C3 CRC64;

Query Match 17.8%; Score 24; DB 4; Length 199;
Best Local Similarity 100.0%; Pred. No. 6.1e-17;
Matches 24; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 100 NNLVYDTSDDYHLKLDLEGIQ 123
Db 107 NNLVYDTSDDYHLKLDLEGIQ 130

RESULT 4
Q16631
ID Q16631 PRELIMINARY; PRT; 217 AA.
AC Q16631; Q14406;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DE "Human growth hormone DNA sequence and mRNA structure: possible
DE alternative splicing.";
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=82014939; PubMed=6269091;
RA Denoto F.M., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=84057143; PubMed=6357679;
RA Adelman J.P., Hayflick J.S., Vasser M., Seeburg P.H.;
RT "In vitro deletional mutagenesis for bacterial production of the
RT 20,000-dalton form of human pituitary growth hormone.";
RL DNA 2:183-193(1983).
DR EMBL; V00520; CAA23779.1; -.
DR HSSP; P01241; LHGU.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
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DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 24803 MW; CCC4D81150D908AC CRC64;

Query Match 16.3%; Score 22; DB 4; Length 217;
Best Local Similarity 100.0%; Pred. No. 8.1e-15;
Matches 22; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 114 LLKDLEEGIQTLMGRLDGSPR 135
Db 139 LLKDLEEGIQTLMGRLDGSPR 160

RESULT 5
Q9UNL5
ID Q9UNL5 PRELIMINARY; PRT; 171 AA.
AC Q9UNL5;
DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE GROWTH HORMONE SPLICE VARIANT.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PITUITARY;
RA Song H., Peng Y., Dai M., Huang Q., Mao Y., Zhang Q., Mao M., Fu G.,
RA Luo M., Chen J., Hu R.;
RT "Human growth hormone variant splicing gene.";
RL Submitted (DEC-1998) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF110644; AAD48584.1; -.
DR HSSP; P01241; 1AXI.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00286; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 171 AA; 19801 MW; 9FA9013991FA9F28 CRC64;

Query Match 14.1%; Score 19; DB 4; Length 171;
Best Local Similarity 100.0%; Pred. No. 9e-12;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 66 EETQOKSNLELLRISLLLI 84
Db 91 EETQOKSNLELLRISLLLI 109

RESULT 6
Q9HBZ1
ID Q9HBZ1 PRELIMINARY; PRT; 179 AA.
AC Q9HBZ1;
DT 01-MAR-2001 (TREMBLrel. 16, Created)
DT 01-MAR-2001 (TREMBLrel. 16, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE GROWTH HORMONE VARIANT.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PITUITARY;
RA Gu J., Huang Q., Li N., Xu S., Han Z., Fu G., Chen Z.;
RT "A novel gene expressed in human pituitary.";
RL Submitted (SEP-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF185611; AAG09699.1; -.
DR HSSP; P01241; 1AXI.
DR InterPro; IPR001400; SOMATOTROPIN.
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DR Pfam: PF00103; hormone: 2.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 179 AA; 20561 MW; 0E875A91BE0B9B7E CRC64;

Query Match 14.1%; Score 19; DB 4; Length 179;
Best Local Similarity 100.0%; Pred. No. 9.3e-12;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 66 EETQOKSNLELLRLISLLLI 84
Db 91 EETQOKSNLELLRLISLLLI 109

RESULT 7
ID Q07368 PRELIMINARY; PRT; 212 AA.
AC Q07368;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE SOMATOTROPIN 2 PRECURSOR (GROWTH HORMONE 2) (FRAGMENT).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
TX TISSUE=PLACENTA;
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -!- SUBCELLULAR LOCATION: SECRETED.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL: L16553; AAA18840.1; -.
DR HSP: P01241; IAXI.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone: 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Pituitary; Hormone; Signal.
FT SIGNAL 1 ? SOMATOTROPIN 1.
FT CHAIN ? 217 BY SIMILARITY.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24942 MW; FF5AA8915131F2BC CRC64;

Query Match 14.1%; Score 19; DB 6; Length 217;
Best Local Similarity 100.0%; Pred. No. 1.1e-11;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 66 EETQOKSNLELLRLISLLLI 84
Db 91 EETQOKSNLELLRLISLLLI 109

RESULT 9
ID Q07369 PRELIMINARY; PRT; 217 AA.
AC Q07369;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE SOMATOTROPIN 3 PRECURSOR (GROWTH HORMONE 3).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
OC Cercopithecinae; Macaca.
OC NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
TX TISSUE=PLACENTA;
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -!- SUBCELLULAR LOCATION: SECRETED.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL: L16554; AAA18841.1; -.
DR HSP: P01241; IAXI.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone: 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00338; SOMATOTROPIN_1; 1.
OS Macaca mulatta (Rhesus macaque).
SQ SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;

Query Match 14.1%; Score 19; DB 6; Length 212;
Best Local Similarity 100.0%; Pred. No. 1.1e-11;
Matches 19; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 66 EETQOKSNLELLRLISLLLI 84
Db 86 EETQOKSNLELLRLISLLLI 104

RESULT 8
ID Q07367 PRELIMINARY; PRT; 217 AA.
AC Q07367;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE SOMATOTROPIN 1 PRECURSOR (GROWTH HORMONE 1).
OS Macaca mulatta (Rhesus macaque).

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10000-010000-0000

DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)

DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE GROWTH HORMONE (FRAGMENT).
 GN BGH.
 OS Bos taurus (Bovine).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9913;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Laziel A., Solter M.;
 RT "DNA sequence of SSCP haplotypes at the bovine growth hormone (BGH)
 gene.";
 RL Anim. Genet. 0:0-0(1999).
 DR EMBL; AF117349; AAF28805.1; -.
 DR EMBL; AF117348; AAF28805.1; JOINED.
 DR HSSP; P01246; IBST.
 DR InterPro; IPR001400; SOMATOTROPIN.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 FT NON_TER 1
 FT NON_TER 110 110
 SQ SEQUENCE 110 AA; 12454 MW; 0A356B7B30A73D1A CRC64;

Query Match 8.1%; Score 11; DB 6; Length 110;
 Best Local Similarity 100.0%; Pred. No. 0.0014;
 Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRISLLLI 84
 Db 26 LELLRISLLLI 36

RESULT 14
 Q9TSGO PRELIMINARY; PRT; 120 AA.
 AC Q9TSGO;
 DT 01-MAY-2000 (TREMBLrel. 13, Created)
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
 DE 01-JUN-2001 (TREMBLrel. 17, Last annotation update)
 DE GROWTH HORMONE (FRAGMENT).
 GN GH.
 OS Ovis aries (Sheep).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Caprinae; Ovis.
 OX NCBI_TaxID=9940;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Ofir R., Gootwine E.;
 RT "Sequence analysis of the GH1, GH2-N and GH2-z copies of the ovine
 growth hormone gene.";
 RL Mamm. Genome 0:0-0(1997).
 DR EMBL; AF002120; AAB64120.1; -.
 DR HSSP; P01246; IBST.
 DR InterPro; IPR001400; SOMATOTROPIN.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 FT NON_TER 1
 SQ SEQUENCE 120 AA; 13972 MW; 2622C4FA10294C52 CRC64;

Query Match 8.1%; Score 11; DB 6; Length 120;
 Best Local Similarity 100.0%; Pred. No. 0.0015;
 Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRISLLLI 84
 Db 2 LELLRISLLLI 12

RESULT 15
 Q9TQW9 PRELIMINARY; PRT; 192 AA.
 AC Q9TQW9;
 DT 01-MAY-2000 (TREMBLrel. 13, Created)
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
 DT 01-JUN-2001 (TREMBLrel. 17, Last annotation update)
 DE GROWTH HORMONE.
 OS Bos indicus (Zebu), and
 OS Bubalus bubalis (Domestic water buffalo).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
 OC Bovidae; Bovinae; Bos.
 OX NCBI_TaxID=9915, 89462;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Mukhopadhyay U.K., Sahni G.;
 RT "Indian zebu cattle growth hormone cDNA.";
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF177289; AAF03132.1; -.
 DR EMBL; AF177288; AAF03131.1; -.
 DR HSSP; P01246; IBST.
 DR InterPro; IPR001400; SOMATOTROPIN.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
 SQ SEQUENCE 192 AA; 21947 MW; 0C7B5EAF606B3ECC CRC64;

Query Match 8.1%; Score 11; DB 6; Length 192;
 Best Local Similarity 100.0%; Pred. No. 0.0023;
 Matches 11; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 74 LELLRISLLLI 84
 Db 74 LELLRISLLLI 84

Search completed: September 25, 2002, 10:09:36
 Job time: 239 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:57:42 : Search time 29.93 Seconds
(without alignments)
501.001 Million cell updates/sec

Title: US-09-819-094-18

Perfect score: 694

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Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	694	100.0	135	AAW92263	Human anti-angiogenic
2	680	98.0	192	AAW92262	Human anti-angiogenic
3	675	97.3	191	AAW92261	Human placental Ia
4	671	96.7	191	AAW92260	Human placental Ia
5	667	96.1	229	AAU21684	Novel human neoplasia
6	577	83.1	150	AAO02111	Human polypeptide
7	563	81.1	134	AAW92265	Human anti-angiogenic
8	563	81.1	140	AAW92266	Human growth hormone
9	563	81.1	144	AAW92267	Segment of B-cell
10	563	81.1	192	AAW92268	Human growth hormone
11	563	81.1	192	AAW92269	Human anti-angiogenic

12	563	81.1	261	10	AAW91299	Human nerve growth
13	563	81.1	262	12	AAW11740	Human growth hormone
14	560	80.7	138	9	AAW11740	Sequence of proteol
15	560	80.7	190	21	AAW84644	Amino acid sequenc
16	560	80.7	191	20	AAW15809	Primary amino acid
17	560	80.7	191	20	AAW04396	Natural human 22kd
18	560	80.7	191	21	AAW78425	Human growth hormo
19	560	80.7	193	8	AAW70260	Met-Asp-human grow
20	560	80.7	194	20	AAW30530	Recombinant human
21	560	80.7	212	7	AAW60234	Sequence of AP sig
22	560	80.7	214	7	AAW60232	Sequence of Escher
23	560	80.7	214	7	AAW60233	Sequence of Escher
24	560	80.7	214	11	AAW05043	Human growth hormo
25	560	80.7	214	18	AAW10425	Synthetic human gr
26	560	80.7	214	20	AAW31766	Human growth hormo
27	560	80.7	214	21	AAW78424	Human growth hormo
28	560	80.7	214	21	AAW78460	Human growth hormo
29	560	80.7	217	11	AAW05169	Human growth hormo
30	560	80.7	217	21	AAW26769	Secretory cell pro
31	560	80.7	217	22	AAW35428	Secretory cell lin
32	560	80.7	241	20	AAW8526	Fusion of killer t
33	560	80.7	244	12	AAW10042	Plasmid pOW885 hum
34	560	80.7	245	21	AAW69791	WPSP-MWPM20-(His
35	560	80.7	262	7	AAW61033	Human beta-nerve g
36	560	80.7	274	21	AAW26776	Human growth hormo
37	560	80.7	360	21	AAW26777	Human growth hormo
38	560	80.7	397	12	AAW10043	Plasmid pOW360 enc
39	560	80.7	407	22	AAW49195	Human growth hormo
40	557	80.3	191	7	AAW60016	Sequence of human
41	557	80.3	191	19	AAW71289	Human growth hormo
42	557	80.3	217	7	AAW60719	Sequence of pre an
43	557	80.3	310	11	AAW03255	Fusion protein of
44	556	80.1	191	13	AAW24270	Mature human growt
45	556	80.1	191	13	AAW24271	Mature human growt

ALIGNMENTS

RESULT 1

AAW92263

ID AAW92263 standard; Protein; 135 AA.

XX

AC AAW92263;

XX 08-JUN-1999 (first entry)

DT Human anti-angiogenic peptide 16K hPL Met-1Arg134.

DE Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granuloma; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.

XX Homo sapiens.

OS WO9851323-Al.

PN 19-NOV-1998.

PD 12-MAY-1998;

PF 98WO-US09691.

XX 13-MAY-1997;

XX 97US-0046394.

XX (REGC) UNIV CALIFORNIA.

XX

PI Martial JA, Struman I, Taylor R, Weiner RI;
XX WPI: 1999-045192/04.
DR N-PSDB; AAX01703.
XX
XX New anti-angiogenic peptides - comprise N-terminal fragments of
PT human placental lactogen, human growth hormone, growth hormone
PT variant or human prolactin
XX
XX Claim 3; Page 47; 87pp; English.
XX
XX This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction.
XX
XX Sequence 135 AA;
SQ
Query Match 100.0%; Score 694; DB 20; Length 135;
Best Local Similarity 100.0%; Pred. No. 5.1e-61;
Matches 135; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MVQTVPLSLRFLDHAMLQAHRAHQAIDTYQFEETYPKDKYSFHLHDSQTSFSDSIP 60
Db 1 mvqtvplslrflhdamlqahrahqiaidtyqfeetyipkdqysfhlhdsqtsfssdip 60
Qy 61 TPSNWEETQOKSNLELRISLILLESWLEPVFLRSMFANNLYVDYSDSDYHLLKDLLE 120
Db 61 tpsnmeetqknslelrlislllieswlepvflrsmfannlyvdytsdsdyhllkdee 120
Qy 121 GIQTLMGRLDGSPR 135
Db 121 giqlmgrldegsp 135
RESULT 2
AAW92262
ID AAW92262 standard; Protein; 192 AA.
XX
XX AAW92262;
XX
XX 08-JUN-1999 (first entry)
DT
XX
XX Human anti-angiogenic peptide hPL Met-1Phe191.
DE
XX
XX Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;
KW

KW placental vascularisation; pregnancy; treatment; angiogenic disease;
KW tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation;
KW arthritis; atherosclerotic plaques; corneal graft neovascularisation;
KW wound healing; proliferative retinopathy; macular degeneration; trachoma;
KW granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
KW psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
KW ulcer; leukaemia; reproductive disorder; contraceptive agent;
KW gene therapy; pre-eclampsia; intrauterine growth retardation;
KW placental dysfunction.
XX
XX Homo sapiens.
OS
XX WO9851323-A1.
PN
XX 19-NOV-1998.
PD
XX 12-MAY-1998; 98WO-US09691.
PF
XX 13-MAY-1997; 97US-0046394.
PR
XX (REGC) UNIV CALIFORNIA.
PA
XX Martial JA, Struman I, Taylor R, Weiner RI;
PI
XX WPI: 1999-045192/04.
DR
XX N-PSDB; AAX01702.
DR
XX New anti-angiogenic peptides - comprise N-terminal fragments of
PT human placental lactogen, human growth hormone, growth hormone
PT variant or human prolactin
XX
XX Example 3; Page 47; 87pp; English.
XX
XX This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vascularisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vascularisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vascularisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction.
XX
XX Sequence 192 AA;
SQ
Query Match 98.0%; Score 680; DB 20; Length 192;
Best Local Similarity 98.5%; Pred. No. 1.9e-59;
Matches 133; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
Qy 1 MVQTVPLSLRFLDHAMLQAHRAHQAIDTYQFEETYPKDKYSFHLHDSQTSFSDSIP 60
Db 1 mvqtvplslrflhdamlqahrahqiaidtyqfeetyipkdqysfhlhdsqtsfssdip 60

PT disorders -
PS Claim 20; SEQ ID NO 16003; 1399pp + Sequence Listing; English.
XX
XX The invention relates to human polynucleotides (AAI79941-AAI93841) and the encoded proteins (AAO00010-AAO13910) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activin/inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and inflammation.
CC Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences.
CC
XX
SQ Sequence 150 AA;

Query Match 83.1%; Score 577; DB 22; Length 150;
Best Local Similarity 93.3%; Pred. No. 2.1e-49;
Matches 112; Conservative 0; Mismatches 8; Indels 0; Gaps 0;
Qy 11 FDHMLQAHRAHQLAIDTYQFEETYPKDKYSLHDSQTSFSDSITPNSMEETQ 70
Db 3 fdhmlqahrahhlaidayhefeetyipkdqysfhlhdsqtscfcsdpsiptnmeettg 62
Qy 71 KSNLELRISLLIESWLEPVRFLRSMFANNLVYDTSDDYHLLKDLREGIOTLMGRLE 130
Db 63 ksnlelrissllieswlepvrflrsmfannlvdytssddynflkdkleegiqlmgrae 122

RESULT 7
AAW92265
ID AAW92265 standard; Protein; 134 AA.
XX
AC AAW92265;
XX
XX 08-JUN-1999 (first entry)
DT
DE Human anti-angiogenic peptide 16K hGH Met-1Pro133.
XX
KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis; growth hormone; hGH; hGH-V; capillary endothelial cell proliferation; placental vascularisation; pregnancy; treatment; angiogenic disease; tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation; arthritis; atherosclerotic plaques; corneal graft neovascularisation; wound healing; proliferative retinopathy; macular degeneration; trachoma; granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome; psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion; ulcer; leukaemia; reproductive disorder; contraceptive agent; gene therapy; pre-eclampsia; intrauterine growth retardation; placental dysfunction.
KW
XX

OS Homo sapiens.
XX
XX WO9851323-A1.
PN
XX
XX 19-NOV-1998.
PD
XX
XX 12-MAY-1998; 98WO-US09691.
PF
XX
XX 13-MAY-1997; 97US-0046394.
PR
XX
XX (REGC) UNIV CALIFORNIA.
PA
XX
XX Martial JA, Struman I, Taylor R, Weiner RI;
PI
XX WPI; 1998-045192/04.
XX
XX N-PSDB; AAX01707.

XX
PT New anti-angiogenic peptides - comprise N-terminal fragments of human placental lactogen, human growth hormone, growth hormone variant or human prolactin
PT
XX
PS Claim 4; Page 49-50; 87pp; English.
XX
CC This invention describes novel human anti-angiogenic peptides derived from 10 to 150 consecutive amino acids selected from the N-terminal end of human placental lactogen (hPL), human growth hormone (hGH), growth hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit capillary endothelial cell proliferation and organisation (ii) inhibit angiogenesis in chick chorioallantoic membrane and (iii) binds to at least one specific receptor which does not bind an intact full length hGH, hPL, prolactin or hGH-V. The invention also describes a method for diagnosing a probable abnormality of placental vascularisation during pregnancy. The peptides can be used for treating an angiogenic disease in a subject, for inhibiting tumour formation or growth in a patient or for modulating vascularisation of a patient's placenta. In particular, the peptides can be used for preventing or treating e.g. malignant tumours, angiofibroma, arteriovenous malformation, corneal graft neovascularisation, arthritis, atherosclerotic plaques, proliferative retinopathy such as diabetic retinopathy, macular degeneration, granulations such as those occurring in haemophilic joints, inappropriate vascularisation in wound healing such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis, pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours, Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers, leukaemia, and reproductive disorders such as follicular and luteal cysts and choriocarcinoma. They can also be used as contraceptive agents. DNA encoding the peptides can be used in gene therapy. The measurement of abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL can be used in assays for impairment of vascular development associated with pre-eclampsia, intrauterine growth retardation, and placental dysfunction.
CC
XX
SQ Sequence 134 AA;

Query Match 81.1%; Score 563; DB 20; Length 134;
Best Local Similarity 82.1%; Pred. No. 4.4e-48;
Matches 110; Conservative 11; Mismatches 13; Indels 0; Gaps 0;

Qy 1 MVQTVPLSLFLDHMLQAHRAHQLAIDTYQFEETYPKDKYSLHDSQTSFSDSIP 60
Db 1 mftptlslrlfdhmlrahrlhqladtyqfeeyyipkeqysflqpqtstlsesip 60
Qy 61 TPSNMEETQOKSNLELRISLLIESWLEPVRFLRSMFANNLVYDTSDDYHLLKDLLEE 120
Db 61 tpsnreetqgksnlelrissllieswlepvgflrsvfanslvygadsenvydlkdllee 120
Qy 121 GIOTLMGRLEDSGP 134
Db 121 giqltmgrledgsp 134

RESULT 8
AAP91041
ID AAP91041 standard; protein; 140 AA.
XX
AC AAP91041;
XX
XX 14-DEC-1989 (first entry).
DT
XX Human growth hormone segment.
DE
XX Human growth hormone; fusion protein; thrombin;
KW geriatric dementia; nervous disorders; human nerve factor.
XX
XX Homo sapiens (human).
OS
XX EP329175-A.

XX 23-AUG-1989.
PD
XX
XX 17-FEB-1989; 89EP-0102795.
PF
XX
PR 19-FEB-1988; 88JP-0035042.
XX
XX (TOYJ) TOSOH CORP.
PA
XX
PI Ohtsuka E;
XX
XX WPI; 1989-243092/34.
DR
XX
XX New human nerve growth factor gene encoding fusion protein
PT - having cleavage site for thrombin, useful for treating geriatric
PT dementia, etc.
XX
XX Disclosure; page 21; 38pp; English.
PS
XX Human growth hormone segment, used at the N-terminal of a fusion
CC protein, which contains a thrombin recognition site, and human beta nerve
CC growth factor (beta-NGF) at the C-terminal. Beta-NGF can be used to
CC control geriatric dementia and other nervous disorders, and can be
CC released from the fusion protein by incubation with thrombin (see
CC AAN90577-8, AAP91034, AAP91299).
XX
XX Sequence 140 AA;
SQ

Query Match 81.1%; Score 563; DB 10; Length 140;
Best Local Similarity 81.5%; Pred. No. 4.7e-48;
Matches 110; Conservative 11; Mismatches 14; Indels 0; Gaps 0;
QY 1 MVQTVPLSLFDHAMLQAHRAHQLAIDTYQEFETYIPKQKYSFLHDSQTSFSDSIP 60
| :|||||:||||| :||| :||||| :||||| :||| :|||
Db 1 mftptplsrlfdnamlrahrhlqlafdyqefeeayipkeqkysflqpqlcfesesip 60
QY 61 TPSNMEETQOKSNLELLRISLLIESWLEPVFLRSMFANNLYVDTSDSDYHLLKDLEE 120
||| :|||||:|||||:|||||:|||||:|||||:|||||:||||| :||| :|||||
Db 61 tpsnreetqgksnlellrslslllqswlepqvflrsvfanslvvgasdsnvdyllkdee 120
QY 121 GIOTLMGRLEDGSPR 135
| :|||||:|||||
Db 121 giotlmgrledgspr 135

RESULT 9
AAR05313
ID AAR05313 standard; protein; 144 AA.
XX
AC AAR05313;
XX
DT 19-JUL-1990 (first entry)
XX
DE Segment of B-cell stimulatory factor-2 (IL-5).
XX
KW B-cell stimulatory factor-2; interleukin-5.
XX
OS Homo sapiens.
XX
PN JP02013375-A.
XX
PD 17-JAN-1990.
XX
PF 01-JUL-1988; 88JP-0162556.
XX
PR 01-JUL-1988; 88JP-0162556.
XX
PA (TOYJ) TOSOH CORP.
XX
XX WPI; 1990-062207/09.
DR
DR N-PSDB; AAR02028.
XX

PT Prepn. of human B-cell differentiation factor - from specified DNA
PT sequence segment, by recombinant DNA technique, gives protein of
PT specified amino acid sequence.
XX
XX Disclosure; Page 9; 17pp; Japanese.
XX
CC The sequence encoding this protein can be fused with DNA encoding B-cell
CC differentiation factor (IL-6) and ligated into an expression vector for
CC prodn. of a fusion protein.
CC See also AAR05311.
XX
XX Sequence 144 AA;
SQ

Query Match 81.1%; Score 563; DB 11; Length 144;
Best Local Similarity 81.5%; Pred. No. 4.8e-48;
Matches 110; Conservative 11; Mismatches 14; Indels 0; Gaps 0;
QY 1 MVQTVPLSLFDHAMLQAHRAHQLAIDTYQEFETYIPKQKYSFLHDSQTSFSDSIP 60
| :|||||:||||| :||| :||||| :||||| :||| :|||
Db 1 mftptplsrlfdnamlrahrhlqlafdyqefeeayipkeqkysflqpqlcfesesip 60
QY 61 TPSNMEETQOKSNLELLRISLLIESWLEPVFLRSMFANNLYVDTSDSDYHLLKDLEE 120
||| :|||||:|||||:|||||:|||||:|||||:|||||:||||| :||| :|||||
Db 61 tpsnreetqgksnlellrslslllqswlepqvflrsvfanslvvgasdsnvdyllkdee 120
QY 121 GIOTLMGRLEDGSPR 135
| :|||||:|||||
Db 121 giotlmgrledgspr 135

RESULT 10
AAP90129
ID AAP90129 standard; protein; 192 AA.
XX
AC AAP90129;
XX
DT 06-FEB-1996 (revised)
DT 01-NOV-1989 (first entry)
XX
XX Human growth hormone.
XX
XX Human growth hormone; fusion protein; recombinant
KW vector.
XX
OS Homo sapiens (Human).
XX
PN JP01144981-A.
XX
PD 07-JUN-1989.
XX
PF 02-DEC-1987; 87JP-0304937.
XX
PR 02-DEC-1987; 87JP-0304937.
XX
PA (WAKU) WAKUNGA SEIYAKU KK.
XX
XX WPI; 1989-209284/29.
DR
DR N-PSDB; AAN90269.
XX
PT Recombinant vector contg. fusion protein - consisting of human
PT growth hormone or deriv. ligated to foreign protein, for stability
PT and high yield.
XX
XX Disclosure; Fig 1; 19pp; Japanese.
XX
CC The invention consists of a vector contg. a fusion protein which is
CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
CC formed by substn. of Met-14 with Leu) and a foreign protein.
CC Stability of the vector in the host is greatly increased so the
CC protein yield is higher.
XX
XX Sequence 192 AA;
SQ

DR WPI; 1989-243092/34.
 XX New human nerve growth factor gene encoding fusion protein
 PT - having cleavage site for thrombin, useful for treating geriatric
 PT dementia, etc.
 XX
 XX Claim 36; page 31-32; 38pp; English.
 XX
 CC Fusion protein consisting of human growth hormone at the
 CC N-terminal end (1st region), a 3 amino acid sequence representing
 CC thrombin recognition site, and human beta nerve growth factor (beta-NGF)
 CC at the C-terminal. Beta-NGF can be used to control geriatric dementia
 CC and other nervous disorders, and can be released from the fusion
 CC protein by incubation with thrombin (see AAN90577-8, AAP91034,
 CC AAP91041).
 XX
 XX Sequence 261 AA;
 SQ

Query Match 81.1%; Score 563; DB 10; Length 261;
 Best Local Similarity 81.5%; Pred. No. 9.8e-48;
 Matches 110; Conservative 11; Mismatches 14; Indels 0; Gaps 0;

QY 1 MVOTVPLSLRFLDHAMLOAHRAHQLAIDTYOEFEETIYIPKQKYSFLHDSQTSFSDSIP 60
 Db 1 mftptlslrlfdnamlrahrlhqlafdtgfeeyayipkqkysflqnpqtslcfesip 60
 QY 61 TPNMEEQKSNLELLRLISLLIESWLEPVFLRSMFANNLVYDTSDDYHLKDL EE 120
 Db 61 tpsnreetqkksnlellrlisllligswlepvlrsvfanslvgyadsnvydlkdl ee 120
 QY 121 GIOTLMGRLEDSGR 135
 Db 121 giotlmgrledgsgr 135

RESULT 13
 AAR11740
 ID AAR11740 standard; Protein; 262 AA.
 XX
 AC AAR11740;
 XX
 DT 25-JUN-1991 (first entry)
 XX
 DE Human growth hormone/human nerve growth factor beta fusion protein.
 XX
 KW hGH; hNGF; nervous system diseases; dementia.
 XX
 OS Homo sapiens.
 XX
 PN JP03067598-A.
 XX
 PD 22-MAR-1991.
 XX
 PF 07-JUL-1989; 89JP-0202835.
 XX
 PR 07-AUG-1989; 89JP-0202835.
 XX
 PA (TOYJ) TOSOH CORP.
 XX
 DR WPI; 1991-128768/18.
 DR N-PSDB; AAQ11578.
 XX
 PT Purificn. of human neuron growth factor beta-subunit-contg. protein -
 PT by contacting with gel having cation exchange gp. in presence of
 PT urea
 XX
 PS Disclosure ; fig 1; 7pp; Japanese.
 XX
 CC A recombinant human nerve growth factor beta subunit-contg. protein
 CC can be produced as this fusion protein. It is purified by contacting
 CC a gel having a cation exchange gp. with the fusion protein, in the
 CC presence of urea. The purified protein is useful in a medicament

CC for treating disorders of the nervous system, eg dementia.
 XX
 SQ Sequence 262 AA;
 XX

Query Match 81.1%; Score 563; DB 12; Length 262;
 Best Local Similarity 81.5%; Pred. No. 9.9e-48;
 Matches 110; Conservative 11; Mismatches 14; Indels 0; Gaps 0;

QY 1 MVOTVPLSLRFLDHAMLOAHRAHQLAIDTYOEFEETIYIPKQKYSFLHDSQTSFSDSIP 60
 Db 1 mftptlslrlfdnamlrahrlhqlafdtgfeeyayipkqkysflqnpqtslcfesip 60
 QY 61 TPNMEEQKSNLELLRLISLLIESWLEPVFLRSMFANNLVYDTSDDYHLKDL EE 120
 Db 61 tpsnreetqkksnlellrlisllligswlepvlrsvfanslvgyadsnvydlkdl ee 120
 QY 121 GIOTLMGRLEDSGR 135
 Db 121 giotlmgrledgsgr 135

RESULT 14
 AAR81226
 ID AAR81226 standard; protein; 138 AA.
 XX
 AC AAP81226;
 XX
 DT 20-NOV-1990 (first entry)
 XX
 DE Sequence of protein with somatomedin-like activity.
 XX
 KW Growth hormone.
 XX
 OS Synthetic.
 XX
 PN JP63167798-A.
 XX
 PD 11-JUL-1988.
 XX
 PF 29-DEC-1986; 86JP-0310177.
 XX
 PR 29-DEC-1986; 86JP-0310177.
 XX
 PA (TOYJ) TOYO SODA MFG KK.
 XX
 DR WPI; 1988-232632/33.
 DR N-PSDB; AAN81605.
 XX
 PT Polypeptide with somatomedin-like activity -
 PT by culturing bacterium transformed by plasmid contg. gene
 PT segment with specified DNA sequence
 XX
 PS Claim 2(1); Page 609; 9pp; Japanese.
 XX
 CC The polypeptide (AAP81226) with somatomedin-like activity and the DNA
 CC (AAN81605) encoding it are claimed. A Met resicual gp. may be added to
 CC the N-terminal. The polypeptide acts on the bone structure of mammals,
 CC including humans, to promote bone growth. The polypeptide has high
 CC production rate and is easily extracted from bacterial culture medium
 CC and refined for use as a bone growth accelerator.
 XX
 XX Sequence 138 AA;
 SQ

Query Match 80.7%; Score 560; DB 9; Length 138;
 Best Local Similarity 82.6%; Pred. No. 9.1e-48;
 Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

QY 4 TVPLSLRFLDHAMLOAHRAHQLAIDTYOEFEETIYIPKQKYSFLHDSQTSFSDSIP 63
 Db 3 tptlslrlfdnamlrahrlhqlafdtgfeeyayipkqkysflqnpqtslcfesip 62

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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:58:17 ; Search time 12.99 Seconds
(without alignments)
253.846 Million cell updates/sec

Title: US-09-819-094-18

Perfect score: 694

Sequence: 1 MVQIVPLSRFLDHAMLAQHR.....KDLREGIOTLMGRLEDGSPR 135

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Issued_Patents_AA.*

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- 2: /cgn2.6/ptodata/2/iaa/5B_COMB.pap.*
- 3: /cgn2.6/ptodata/2/iaa/6A_COMB.pap.*
- 4: /cgn2.6/ptodata/2/iaa/6B_COMB.pap.*
- 5: /cgn2.6/ptodata/2/iaa/PCTUS_COMB.pap.*
- 6: /cgn2.6/ptodata/2/iaa/backfiles1.pap.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	563	81.1	192	1	US-08-093-383-1
2	560	80.7	191	4	US-09-284-878-5
3	560	80.7	194	2	US-08-383-621-4
4	560	80.7	194	3	US-08-459-906-4
5	560	80.7	217	3	US-08-589-028-10
6	560	80.7	217	3	US-08-784-582-10
7	560	80.7	217	4	US-08-785-271-10
8	560	80.7	217	4	US-08-759-628-11
9	560	80.7	217	4	US-09-284-878-1
10	560	80.7	274	3	US-08-784-582-71
11	560	80.7	360	3	US-08-784-582-73
12	554	79.8	191	4	US-09-465-461-1
13	554	79.8	217	1	US-08-187-756C-4
14	554	79.8	217	1	US-08-469-658-51
15	554	79.8	217	2	US-08-469-658-51
16	554	79.8	217	2	US-08-710-324A-4
17	547	78.8	191	4	US-08-800-215C-18
18	545	78.5	191	4	US-08-800-215C-16
19	545	78.5	191	4	US-08-800-215C-20
20	476.5	68.7	176	3	US-08-791-728-1
21	470.5	67.8	176	3	US-08-791-728-2
22	463	66.7	168	6	5424199-3
23	458.5	66.1	198	1	US-08-187-756C-5
24	458.5	66.1	198	2	US-08-710-324A-5
25	386	55.6	191	1	US-08-468-824-8
26	384	55.3	191	1	US-07-963-331D-4
27	383	55.2	190	1	US-08-388-267C-2

ALIGNMENTS

RESULT 1

US-08-093-383-1

; Sequence 1, Application US/08093383

; Patent No. 5489529

; GENERAL INFORMATION:

; APPLICANT: DeBoer, Herman A.

; APPLICANT: Heyneker, Herbert L.

; APPLICANT: Seeburg, Peter H.

; TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone

; NUMBER OF SEQUENCES: 30

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Genentech, Inc.

; STREET: 460 Point San Bruno Blvd

; CITY: South San Francisco

; STATE: California

; COUNTRY: USA

; ZIP: 94080

; COMPUTER READABLE FORM:

; MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: patin (Genentech)

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/093,383

; FILING DATE: 14-JUL-1993

; CLASSIFICATION: 435

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: 07/619827

; FILING DATE: 28-NOV-1990

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: 07/198824

; FILING DATE: 05-APR-1988

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: 06/632361

; FILING DATE: 19-JUL-1984

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: 06/303687

; FILING DATE: 18-SEP-1981

; ATTORNEY/AGENT INFORMATION:

; NAME: Johnston, Sean A.

; REGISTRATION NUMBER: F35,910

; REFERENCE/DOCKET NUMBER: 46C4

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 415/225-3562

; TELEFAX: 415/952-9881

; TELEX: 910/371-7168

; INFORMATION FOR SEQ ID NO: 1:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 192 amino acids

; TYPE: amino acid

Sequence 2, Appli
Patent No. 5210180
Sequence 2, Appli
Sequence 2, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 22, Appli
Sequence 29, Appli
Sequence 2, Appli
Sequence 2, Appli

; TOPOLOGY: linear
US-08-093-383-1

Query Match 81.1%; Score 563; DB 1; Length 192;
Best Local Similarity 81.5%; Pred. No. 4.5e-57;
Matches 110; Conservative 11; Mismatches 14; Indels 0; Gaps 0;

Qy 1 MVQTVPLSRFLDHAMLAHQRAHQAIDTYQEFETYPKDKYSFLHDSOTSFSDSIPTPS 60
Db 1 MFPTIPLSRFLDHAMLAHQRAHQAIDTYQEFETYPKDKYSFLHDSOTSFSDSIPTPS 60

Qy 61 TPSNMEETQOKSNLELLRISLLILLESWLEPVFLRSFANNLVYDTSDDYHLLKDLLEE 120
Db 61 TPSNMEETQOKSNLELLRISLLILLESWLEPVFLRSFANNLVYDTSDDYHLLKDLLEE 120

Qy 121 GIQTLMGRLDGSPR 135
Db 121 GIQTLMGRLDGSPR 135

RESULT 2
US-09-284-878-5
; Sequence 5, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
; APPLICANT: Olazaran, Martha Guerrero
; APPLICANT: Saldana, Hugo Barrera
; APPLICANT: Salgado, Jose Maria Viader
; TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
; FILE REFERENCE: 1829.0010000
; CURRENT APPLICATION NUMBER: US/09/284,878
; PRIOR FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 5
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-5

Query Match 80.7%; Score 560; DB 4; Length 191;
Best Local Similarity 82.6%; Pred. No. 9.9e-57;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

Qy 4 TVPLSRFLDHAMLAHQRAHQAIDTYQEFETYPKDKYSFLHDSOTSFSDSIPTPS 63
Db 3 TIPLSRFLDHAMLAHQRAHQAIDTYQEFETYPKDKYSFLHDSOTSFSDSIPTPS 62

Qy 64 NMEETQOKSNLELLRISLLILLESWLEPVFLRSFANNLVYDTSDDYHLLKDLLEE 123
Db 63 NREETQOKSNLELLRISLLILLESWLEPVFLRSFANNLVYDTSDDYHLLKDLLEE 122

Qy 124 TLMGRLEDGSPR 135
Db 123 TLMGRLEDGSPR 134

RESULT 3
US-08-383-621-4
; Sequence 4, Application US/08383621
; Patent No. 5951972
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.

; TITLE OF INVENTION: Stabilization Of Somatotropins And Other
; TITLE OF INVENTION: Proteins By Modification Of Cysteine Residues
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dr. Estelle J. Tsevdos
; STREET: 1937 West Main Street, P.O. Box 60
; CITY: Stamford
; STATE: Connecticut
; COUNTRY: U.S.A.
; ZIP: 06904-0060
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/383,621
; FILING DATE: 06-FEB-1995
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/766,142
; FILING DATE: 25-SEP-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Tsevdos, Estelle J.
; REGISTRATION NUMBER: 31,145
; REFERENCE/DOCKET NUMBER: 31,278-01
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 203-321-2756
; TELEFAX: 203-321-2971
; TELEX: 203-710-474-4059
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 194 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-383-621-4

Query Match 80.7%; Score 560; DB 2; Length 194;
Best Local Similarity 82.6%; Pred. No. 1e-56;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

Qy 4 TVPLSRFLDHAMLAHQRAHQAIDTYQEFETYPKDKYSFLHDSOTSFSDSIPTPS 63
Db 6 TIPLSRFLDHAMLAHQRAHQAIDTYQEFETYPKDKYSFLHDSOTSFSDSIPTPS 65

Qy 64 NMEETQOKSNLELLRISLLILLESWLEPVFLRSFANNLVYDTSDDYHLLKDLLEE 123
Db 66 NREETQOKSNLELLRISLLILLESWLEPVFLRSFANNLVYDTSDDYHLLKDLLEE 125

Qy 124 TLMGRLEDGSPR 135
Db 126 TLMGRLEDGSPR 137

RESULT 4
US-08-459-906-4
; Sequence 4, Application US/08459906
; Patent No. 6010999
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.
; TITLE OF INVENTION: Stabilization Of Somatotropins And Other
; TITLE OF INVENTION: Proteins by Modification Of Cysteine Residues
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: American Cyanamid Company
; STREET: One Cyanamid Plaza

; CITY: Wayne
; STATE: New Jersey
; COUNTRY: U.S.A.
; ZIP: 07470-8426
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/459,906
; FILING DATE: 02-JUN-1995
; CLASSIFICATION: 514
; ATTORNEY/AGENT INFORMATION:
; NAME: Webster, Darryl L.
; REGISTRATION NUMBER: 34,276
; REFERENCE/DOCKET NUMBER: 31,278-03
; TELEPHONE: 201-831-3247
; TELEFAX: 201-831-3305
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 194 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-459-906-4

Query Match 80.7%; Score 560; DB 3; Length 194;
Best Local Similarity 82.6%; Pred. No. 1e-56;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

Qy 4 TVPLSLRFDHMLQAHRAHQLAIDTYQEFETIYPKQKYSFLHDSQTSFSDSIPTPS 63
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 6 TIPLSLFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPPS 65

Qy 64 NMEETQOKSNLELLRLISLLIESWLEPVRFLSRMFANNLVYDTSDDYHLKDLREGIQ 123
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 66 NREETQOKSNLELLRLISLLIOSWLEPQVFLRSVFNLSVYGASDSNVYDLKDLREGIQ 125

Qy 124 TLMGRLEDGSPR 135
|:|||||:|||||
Db 126 TLMGRLEDGSPR 137

RESULT 5
US-08-589-028-10
; Sequence 10, Application US/08589028
; Patent No. 6087129
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6087129mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quade, Christian
; APPLICANT: Kruse, Fred
; TITLE OF INVENTION: Recombinant Expression of Proteins From
; NUMBER OF SEQUENCES: 50
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P. O. Box 4433
; CITY: Houston
; STATE: TX
; COUNTRY: USA
; ZIP: 77210-4433
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30

; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/589,028
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 47,642
; REFERENCE/DOCKET NUMBER: UTSD:426\HVL
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (512) 418-3000
; TELEFAX: (512) 474-7577
; INFORMATION FOR SEQ ID NO: 10:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; US-08-589-028-10

Query Match 80.7%; Score 560; DB 3; Length 217;
Best Local Similarity 82.6%; Pred. No. 1.2e-56;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

Qy 4 TVPLSLRFDHMLQAHRAHQLAIDTYQEFETIYPKQKYSFLHDSQTSFSDSIPTPS 63
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 29 TIPLSLFDNMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNPQTSLCFSESIPPS 88

Qy 64 NMEETQOKSNLELLRLISLLIESWLEPVRFLSRMFANNLVYDTSDDYHLKDLREGIQ 123
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 89 NREETQOKSNLELLRLISLLIOSWLEPQVFLRSVFNLSVYGASDSNVYDLKDLREGIQ 148

Qy 124 TLMGRLEDGSPR 135
|:|||||:|||||
Db 149 TLMGRLEDGSPR 160

RESULT 6
US-08-784-582-10
; Sequence 10, Application US/08784582
; Patent No. 6110707
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6110707mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quade, Christian
; APPLICANT: Kruse, Fred
; APPLICANT: McGarry, Dennis
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; NUMBER OF SEQUENCES: 79
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P. O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/784,582
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/028,427
; FILING DATE: 15-OCT-1996
; PRIOR APPLICATION DATA:

```

: APPLICATION NUMBER: US 08/589,028
: FILING DATE: 19-JAN-1996
: ATTORNEY/AGENT INFORMATION:
: NAME: Highlander, Steven L.
: REGISTRATION NUMBER: 37,642
: REFERENCE/DOCKET NUMBER: UTSD:514
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 512/418-3000
: TELEFAX: 512/474-7577
: INFORMATION FOR SEQ ID NO: 10:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 217 amino acids
: TYPE: amino acid
: STRANDEDNESS:
: TOPOLOGY: linear
US-08-784-582-10

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[illegible]

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RESULT 7
US-08-785-271-10
; Sequence 10, Application US/08785271
; Patent No. 6194176
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6194176mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thigpen, Anice E.
; APPLICANT: Quaade, Christian
; APPLICANT: Kruse, Fred
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; SECRETORY CELL LINES
; NUMBER OF SEQUENCES: 56
; TITLE OF INVENTION: SECRETORY CELL LINES
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent in Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/785,271
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIORITY APPLICATION DATA:
; APPLICATION NUMBER: US 08/589,028
; FILING DATE: 19-JAN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 37,642
; REFERENCE/DOCKET NUMBER: UTSD:513

```

```

;
; TELECOMMUNICATION INFORMATION:
;
; TELEPHONE: 512/418-3000
; TELEFAX: 512/474-7577
; INFORMATION FOR SEQ ID NO: 10:
;
; SEQUENCE CHARACTERISTICS:
;
; LENGTH: 217 amino acids
;
; TYPE: amino acid
;
; STRANDEDNESS:
;
; TOPOLOGY: linear
;
US-08-785-271-10

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Query Match	80.7%;	Score	560;	DB	4;	Length	217;
Best Local Similarity	82.6%;	Pred. No.	1.2e-56;				
Matches	109;	Conservative	11;	Mismatches	12;	Indels	0;
Gaps							
QY	4	TVPLSRFLDHAMLQAHRAHQIAIDTYQFEETTYTPKQOKYSFLHDQSQTFSFSDSIPTPS	63				
Db	29	TIPLSRFLDHAMLRAHRLHQIAFTYQFEETAYTPKEQKYSFLQNPTQSLCFSESIPTPS	88				
QY	64	NMEETQOKSNLELRISLLLESVLEPVRPFRSFMANLVLVYDTSDDYHLLKLEEGIQ	123				
Db	89	NREETQOKSNLELRISLLLIQSWLEPQVFLRSVFANSLVYGASDVSNYDLLKLEEGIQ	148				
QY	124	TLMGRLDGGSPR	135				
Db	149	TLMGRLDGGSPR	160				

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RESULT      8
US-08-759-628-11
: Sequence 11, Application US/08759628
: Patent No. 6225446
: GENERAL INFORMATION:
: APPLICANT: Altmann, Scott W.
: APPLICANT: Rock, Fernando L.
: APPLICANT: Bazan, J. Fernando
: APPLICANT: Ksteleln, Robert A.
: TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMALIAN PROTEINS
: NUMBER OF SEQUENCES: 11
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: DNAX Research Institute
: STREET: 901 California Avenue
: CITY: Palo Alto
: STATE: California
: COUNTRY: USA
: ZIP: 94304-1104
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: PatentIn Release #1.0, version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/759,628
: FILING DATE: 05-DEC-1996
: CLASSIFICATION: 435
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: US 60/008,574
: FILING DATE: 06-DEC-1995
: ATTORNEY/AGENT INFORMATION:
: NAME: Ching, Edwin P.
: REGISTRATION NUMBER: 34,090
: REFERENCE/DOCKET NUMBER: DX0552Q
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 415-852-9196
: TELEFAX: 415-496-1200
: INFORMATION FOR SEQ ID NO: 11:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 217 amino acids
: TYPE: amino acid
: STRANDEDNESS: single
: TOPOLOGY: linear
: MOLECULE TYPE: protein

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FEATURE:
NAME/KEY: Peptide
LOCATION: 32..53
FEATURE:
NAME/KEY: Peptide
LOCATION: 94..115
FEATURE:
NAME/KEY: Peptide
LOCATION: 133..153
FEATURE:
NAME/KEY: Peptide
LOCATION: 192..210
OTHER INFORMATION: /note= "The peptides above are
OTHER INFORMATION: depicted in Figure 1"
US-08-759-628-11

Query Match 80.7%; Score 560; DB 4; Length 217;
Best Local Similarity 82.6%; Pred. No. 1.2e-56;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;
QY 4 TVPLSRFLDAMLAQAHRAHQLAIDTYQEFETVIPKDKYSFLHDSQTSFSDSIPTPS 63
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 29 TIFSLRFLDNAMLAHRAHLQALADTYQEFEEAYIPKEQKYSFLQNPQSLCFSESIPTPS 88
QY 64 NMEETQOKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHLLKDLLEGIQ 123
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 89 NREETQOKSNLELLRISLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLLKDLLEGIQ 148
QY 124 TLMGRLEDGSPR 135
|:|||||:|||||
Db 149 TLMGRLEDGSPR 160
|:|||||:|||||

RESULT 9
US-09-284-878-1
Sequence 1, Application US/09284878
Patent No. 6342375
GENERAL INFORMATION:
APPLICANT: Olazaran, Martha Guerrero
APPLICANT: Saldana, Hugo Barrera
APPLICANT: Salvador, Jose Maria Viader
TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
FILE REFERENCE: 1829.001000
CURRENT APPLICATION NUMBER: US/09/284,878
CURRENT FILING DATE: 1999-07-21
PRIOR APPLICATION NUMBER: PCT/MX97/00033
PRIOR FILING DATE: 1997-10-24
NUMBER OF SEQ ID NOS: 9
SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 1
LENGTH: 217
TYPE: PRT
ORGANISM: Homo sapiens
US-09-284-878-1

Query Match 80.7%; Score 560; DB 4; Length 217;
Best Local Similarity 82.6%; Pred. No. 1.2e-56;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;
QY 4 TVPLSRFLDAMLAQAHRAHQLAIDTYQEFETVIPKDKYSFLHDSQTSFSDSIPTPS 63
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 29 TIFSLRFLDNAMLAHRAHLQALADTYQEFEEAYIPKEQKYSFLQNPQSLCFSESIPTPS 88
QY 64 NMEETQOKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHLLKDLLEGIQ 123
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Db 89 NREETQOKSNLELLRISLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLLKDLLEGIQ 148
QY 124 TLMGRLEDGSPR 135
|:|||||:|||||
Db 149 TLMGRLEDGSPR 160
|:|||||:|||||

RESULT 10
US-08-784-582-71
Sequence 71, Application US/08784582
Patent No. 6110707
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe A. Karl D.
APPLICANT: NO. 6110707mington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thigpen, Anice E.
APPLICANT: Quaade, Christian
APPLICANT: Kruse, Fred
APPLICANT: McGarry, Dennis
TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
TITLE OF INVENTION: SECRETORY CELL LINES
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
CITY: Houston
STATE: Texas
COUNTRY: USA
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/784,582
FILING DATE: Concurrently Herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/028,427
FILING DATE: 15-OCT-1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/589,028
FILING DATE: 19-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:514
TELECOMMUNICATION INFORMATION:
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 71:
SEQUENCE CHARACTERISTICS:
LENGTH: 274 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-784-582-71

Query Match 80.7%; Score 560; DB 3; Length 274;
Best Local Similarity 82.8%; Pred. No. 1.6e-56;
Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;
QY 4 TVPLSRFLDAMLAQAHRAHQLAIDTYQEFETVIPKDKYSFLHDSQTSFSDSIPTPS 63
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 29 TIFSLRFLDNAMLAHRAHLQALADTYQEFEEAYIPKEQKYSFLQNPQSLCFSESIPTPS 88
QY 64 NMEETQOKSNLELLRISLLIESWLEPVRLSRMFANNLVYDTSDDYHLLKDLLEGIQ 123
|:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 89 NREETQOKSNLELLRISLLIQSWLEPVQFLRSVFANSLVYGASDSNVYDLLKDLLEGIQ 148
QY 124 TLMGRLEDGSPR 135
|:|||||:|||||
Db 149 TLMGRLEDGSPR 160
|:|||||:|||||


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; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 AMINO ACIDS
; TYPE: AMINO ACID
; STRANDEDNESS:
; TOPOLOGY: LINEAR
; MOLECULE TYPE: PROTEIN
US-08-187-756C-4

Query Match          79.8%; Score 554; DB 1; Length 217;
Best Local Similarity 81.8%; Pred. No. 5,8e-56;
Matches 108; Conservative 11; Mismatches 13; Indels 0; Gaps 0;

QY 4 TVPLSLRFDHAMLOAHRAHQLAIDTYQEEFETYPKQKYSFLHDSQTSFSDSIPTPS 63
Db 29 TPLSLRFDNASLRAHRLHQLAFDITYQEEFEAYIPKEQKYSFLQNPQTSCLCFSESIPTPS 88
QY 64 NMETQOKSNLELRISLILLIESWLEPVRLSRMFANNLVYDTSDDYHLLKDLLEGIQ 123
Db 89 NREETOQKSNLELRISLILLIQSWLEPVQLRSVFNLSVYGASDSNVYDLLKDLLEGIQ 148
QY 124 TLMGRLEDGSPR 135
Db 149 TLMGRLEDGSPR 160

RESULT 14
US-08-469-486-51
; Sequence 51, Application US/08469486
; Patent No. 5739281
; GENERAL INFORMATION:
; APPLICANT: Thøgersen, Hans Christian
; APPLICANT: Holtet, Thor Las
; APPLICANT: Etzerodt, Michael
; TITLE OF INVENTION: Improved method for the refolding of
; TITLE OF INVENTION: proteins
; NUMBER OF SEQUENCES: 58
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson
; STREET: 225 Franklin Street
; CITY: Boston
; STATE: Massachusetts
; COUNTRY: USA
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/469,486
; FILING DATE:
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/192,060
; FILING DATE: February 4, 1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Paul T. Clark
; REGISTRATION NUMBER: 30,162
; REFERENCE/DOCKET NUMBER: 06363/002001
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617 542 5070
; TELEFAX: 617 542 8906
; TELEX: 200154
; INFORMATION FOR SEQ ID NO: 51:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-469-486-51
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Query Match          79.8%; Score 554; DB 1; Length 217;
Best Local Similarity 81.8%; Pred. No. 5.8e-56;
Matches 108; Conservative 11; Mismatches 13; Indels 0; Gaps 0;

QY 4 TVPLSLRFDHAMLOAHRAHQLAIDTYQEEFETYPKQKYSFLHDSQTSFSDSIPTPS 63
Db 29 TPLSLRFDNASLRAHRLHQLAFDITYQEEFEAYIPKEQKYSFLQNPQTSCLCFSESIPTPS 88
QY 64 NMETQOKSNLELRISLILLIESWLEPVRLSRMFANNLVYDTSDDYHLLKDLLEGIQ 123
Db 89 NREETOQKSNLELRISLILLIQSWLEPVQLRSVFNLSVYGASDSNVYDLLKDLLEGIQ 148
QY 124 TLMGRLEDGSPR 135
Db 149 TLMGRLEDGSPR 160

RESULT 15
US-08-469-658-51
; Sequence 51, Application US/08469658
; Patent No. 5917018
; GENERAL INFORMATION:
; APPLICANT: Thøgersen, Hans Christian
; APPLICANT: Holtet, Thor Las
; APPLICANT: Etzerodt, Michael
; TITLE OF INVENTION: IMPROVED METHOD FOR THE REFOLDING OF
; TITLE OF INVENTION: PROTEINS
; NUMBER OF SEQUENCES: 58
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street
; CITY: Boston
; STATE: Massachusetts
; COUNTRY: USA
; ZIP: 02110-2804
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/469,658
; FILING DATE: June 5, 1995
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/192,060
; FILING DATE: February 4, 1994
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Paul T. Clark
; REGISTRATION NUMBER: 30,162
; REFERENCE/DOCKET NUMBER: 06363/002002
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617 542 5070
; TELEFAX: 617 542 8906
; TELEX: 200154
; INFORMATION FOR SEQ ID NO: 51:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 217 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-469-658-51

Query Match          79.8%; Score 554; DB 2; Length 217;
Best Local Similarity 81.8%; Pred. No. 5.8e-56;
Matches 108; Conservative 11; Mismatches 13; Indels 0; Gaps 0;
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Qy 4 TVPLSRLEDHAMLOAHRAHQLAIDTYQEFETYPKDOKYSFLHDSQTSFSFSDSIPTPS 63
Db 29 TIPLSRLEFDNASLRAHRLHQLAFDTYQEFEEAYIPKEQYSFLQNPQTSCLCFSESIPTPS 88
Qy 64 NMEETQOKSNLELLRISLLLTIESWLEPVFRLSRMFANNLVYDTSDDYHLLKDLREGIO 123
Db 89 NREETQOKSNLELLRISLLLIQSNLEPVQFLRSVFANSLVYGCASDSNVYDLLKDLREGIO 148
Qy 124 TLMGRLEDGSPR 135
Db 149 TLMGRLEDGSPR 160

Search completed: September 25, 2002, 10:00:48
Job time: 151 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:58:42 ; Search time 16.28 Seconds
(without alignments)
796.810 Million cell updates/sec

Title: US-09-819-094-18
Perfect score: 634
Sequence: 1 MVQTVPLSRFLDAMLQAGR.....KDLGGIOTLMGRLEDGSPR 135

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_71: *
1: pir1: *
2: pir2: *
3: pir3: *
4: pir4: *

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB ID	Description
1	675	97.3	217	1	LCHUC
2	675	97.3	217	2	E32435
3	644	92.8	215	2	A26449
4	560	80.7	217	1	STHU
5	553	79.7	217	2	I67410
6	536	77.2	212	2	I67408
7	536	77.2	217	2	I53267
8	523	75.4	217	2	I67409
9	504	72.6	217	1	STHUV
10	487	70.2	217	2	I67411
11	469	67.6	199	2	B32435
12	466.5	67.2	256	1	STHUV2
13	389	56.1	216	2	B49159
14	388	55.9	190	1	A61584
15	384	55.3	190	2	FN0140
16	383	55.2	190	2	JK0219
17	383	55.2	216	1	STMS
18	383	55.2	216	1	STPG
19	383	55.2	216	2	I46145
20	383	55.2	216	2	JC4632
21	381	54.9	216	1	STRT
22	381	54.9	216	2	S49483
23	381	54.9	216	2	A37782
24	377	54.3	190	2	JS0429
25	375	54.0	190	1	STHO
26	370	53.3	217	1	STBO
27	369	53.2	216	2	JC1514
28	366	52.7	216	2	A60509
29	361	52.0	217	1	STSH

30	361	52.0	217	1	STGT
31	361	52.0	217	2	S32682
32	350.5	50.5	216	2	S04929
33	347	50.0	191	2	A60625
34	303	43.7	190	2	A56816
35	301	43.4	190	2	S21750
36	294	42.4	215	2	I51188
37	289	41.6	195	2	I51250
38	279	40.2	215	2	JS0037
39	252.5	36.4	183	2	A60623
40	230	33.1	209	2	JT0483
41	215	31.0	139	2	S04353
42	213.5	30.8	163	2	JN0387
43	200	28.8	87	4	I67761
44	186	26.8	190	2	JE0144
45	183	26.4	190	2	JC5682

ALIGNMENTS

RESULT 1

LCHUC
Choriomamotropin A precursor [validated] - human
N:Alternate names: chorionic somatomamotropin 1; placental lactogen
C:Species: Homo sapiens (man)
C:Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 08-Dec-2000
C:Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229;
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg,
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: C32435
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: GB:J03071; NID:9183148; PIDN:AAA52551.1; PID:9183151
R:Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Halliwell, R.A.; Page, G.S.; Smith, S.; Ti
in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Josep
A:Reference number: A94422
A:Accession: A94422
A:Molecule type: mRNA
A:Residues: 1-217 <GOO>
R:Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashi
Biochem. Int. 16, 287-292, 1988
A:Title: cDNA cloning of human chorionic somatomamotropin-1 mRNA whose transcription
A:Reference number: I52342; MUID:88209096
A:Accession: I52342
A>Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-3 <TAN>
A:Cross-references: GB:M35419; NID:Q506822
R:Sherwood, L.M.; Birstein, Y.; Schechter, I.
Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979
A:Title: Primary structure of the NH-2-terminal extra piece of the precursor to human
A:Reference number: A93833; MUID:80034970
A:Accession: A93833
A:Molecule type: protein
A:Residues: 1,3-26 <SHE>
A:Experimental source: placenta
R:Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.
Nature 270, 494-499, 1977
A:Title: Construction and analysis of recombinant DNA for human chorionic somatomammo
A:Reference number: A93192; MUID:78071761
A:Accession: A93192
A:Molecule type: DNA
A:Residues: 50-217 <SHI>
A:Experimental source: placenta
R:Li, C.H.; Dixon, J.S.; Chung, D.
Arch. Biochem. Biophys. 155, 95-110, 1973
A:Title: Amino acid sequence of human chorionic somatomamotropin.
A:Reference number: A90054; MUID:73201971
A:Accession: A90054
A:Molecule type: protein

A:Residues: 27-217 <LIC>
A:Experimental source: placenta
R:Niall, H.D.
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K.,
A:Title: The chemistry of the human lactogenic hormones.
A:Reference number: A94427
A:Accession: A94427
A:Molecule type: protein
A:Residues: 27-217 <NIA>
A:Experimental source: placenta
R:Nic A Bhaird, N.; Tipton, K.F.
Biochem. Soc. Trans. 19, 205, 1991
A:Title: Catechol-O-methyltransferase from human placenta: purification and some properties
A:Reference number: A61283; MUID:91244006
A:Accession: A61283
A:Molecule type: protein
A:Residues: 27-46 <NIC>
A:Note: chorionamototropin apparently copurified with placental catechol-O-methyltransferase
R:Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 233, 59-61, 1971
A:Title: Amino-acid sequence of human placental lactogen.
A:Reference number: A93401; MUID:72016313
A:Contents: annotation
R:Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.
Nature New Biol. 235, 64, 1972
A:Reference number: A93405
A:Contents: annotation
R:Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.
J. Biol. Chem. 254, 3782-3787, 1979
A:Title: Identification of the interchain disulfide bonds of dimeric human placental lactogen
A:Reference number: A92251; MUID:79173081
A:Contents: annotation; dimeric disulfide bonds
R:Selby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.
J. Biol. Chem. 259, 13131-13136, 1984
A:Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two functional alleles
A:Reference number: I55229; MUID:85030426
A:Accession: I55229
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:K02401; NID:g181120; PIDN:AAAS2115.1; PID:g181121
R:Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.
Trans. Assoc. Am. Physicians 90, 109-116, 1977
A:Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
A:Reference number: I59658; MUID:78160787
A:Accession: I59658
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 160-217 <RE2>
A:Cross-references: GB:M25118; NID:g181124; PIDN:AAA35721.1; PID:g181125
C:Genetics:
A:Gene: GDB:CSH1
A:Cross-references: GDB:l19084; OMIM:150200
A:Map position: 17q22-17q24
A:Introns: 4/1; 57/3; 97/3; 152/3
C:Superfamily: prolactin
C:Keywords: hormone; placenta
F:1-26/Domain: signal sequence #status experimental <SIG>
F:27-217/Product: chorionamototropin A #status experimental <MAT>
F:79-191/Disulfide bonds: #status experimental
F:208-215/Disulfide bonds: (in monomeric form) #status experimental
F:208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
F:215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

Query Match 97.3%; Score 675; DB 1; Length 217;
Best Local Similarity 98.5%; Pred. No. 2.4e-57;
Matches 132; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
Query 2 VQTVPRLSLFDHMLQAHRAHQAIDITYQEFETYIPKDKYSLFLHDSQTSFSDSIPT 61
|||||
Db 27 VQTVPRLSLFDHMLQAHRAHQAIDITYQEFETYIPKDKYSLFLHDSQTSFSDSIPT 86
|||||

QY 62 PSNMEETQOKSNLELLRISLLIESWLPEVRLSRMFANNLVYDTSDDYHLLKDLLEG 121
|||||
Db 87 PSNMEETQOKSNLELLRISLLIESWLPEVRLSRMFANNLVYDTSDDYHLLKDLLEG 146
|||||
QY 122 IQTLMGRLEDGSPR 135
|||||
Db 147 IQTLMGRLEDGSR 160
|||||

RESULT 2
E32435
chorionamototropin B precursor - human
N:Alternate names: chorionic somatomammotropin 2
C:Species: Homo sapiens (man)
C:Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
C:Accession: E32435
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg, R.
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A:Reference number: A32435; MUID:89307277
A:Accession: E32435
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-217 <CHE>
A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g183153
C:Genetics:
A:Gene: GDB:CSH2
A:Cross-references: GDB:l19813; OMIM:118820
A:Map position: 17q22-17q24
C:Superfamily: prolactin

Query Match 97.3%; Score 675; DB 2; Length 217;
Best Local Similarity 98.5%; Pred. No. 2.4e-57;
Matches 132; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
Query 2 VQTVPRLSLFDHMLQAHRAHQAIDITYQEFETYIPKDKYSLFLHDSQTSFSDSIPT 61
|||||
Db 27 VQTVPRLSLFDHMLQAHRAHQAIDITYQEFETYIPKDKYSLFLHDSQTSFSDSIPT 86
|||||

QY 62 PSNMEETQOKSNLELLRISLLIESWLPEVRLSRMFANNLVYDTSDDYHLLKDLLEG 121
|||||
Db 87 PSNMEETQOKSNLELLRISLLIESWLPEVRLSRMFANNLVYDTSDDYHLLKDLLEG 146
|||||

QY 122 IQTLMGRLEDGSPR 135
|||||
Db 147 IQTLMGRLEDGSR 160
|||||

RESULT 3
A26449
chorionamototropin precursor (allele hCS-3) - human
C:Species: Homo sapiens (man)
C:Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 28-Jul-1995
C:Accession: A26449
R:Hirt, H.; Kimmelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.;
DNA 6, 59-70, 1987
A:Title: The human growth hormone gene locus: structure, evolution, and allelic variation
A:Reference number: A26449; MUID:87161235
A:Accession: A26449
A:Molecule type: DNA
A:Residues: 1-215 <HIR>
C:Superfamily: prolactin
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-215/Product: chorionamototropin, hCS-3 allele #status predicted <MAT>

Query Match 92.8%; Score 644; DB 2; Length 215;
Best Local Similarity 96.3%; Pred. No. 2.2e-54;
Matches 129; Conservative 1; Mismatches 2; Indels 2; Gaps 2;
Query 2 VQTVPRLSLFDHMLQAHRAHQAIDITYQEFETYIPKDKYSLFLHDSQTSFSDSIPT 61
|||||
Db 27 VQTVPRLSLFDHMLQAHRAHQAIDITYQEFETYIPKDKYSLFLHDSQTSFSDSIPT 86
|||||

Db 27 VQTVPLSRLFLHQAHLQRAHLAIDTYQEFETYPKQKYSFLHDSQTSFCFSDSIPT 86
 QY 62 PSNMEETQKSNLELRILSILLIESWLEPVRFLRSWFANNLVYDTSDSDYHLKDLLEG 121
 Db 87 PSNMEETQKSNLELRILSILLIESWLEPVRFLRSWFANNLVYDTSDSDYHLKDLLEG 144
 QY 122 IQTLMGRLEDSGSPR 135
 Db 145 IQTLMGRLEDSGSR 158

RESULT 4
 STHU
 somatotropin 1 precursor [validated] - human
 N:Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
 C:Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short
 C:Species: Homo sapiens (man)
 C>Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 08-Dec-2000
 R:DeNoto, F.M.; Moore, D.D.; Goodman, H.M.
 Nucleic Acids Res. 9, 3719-3730, 1981
 A:Title: Human growth hormone DNA sequence and mRNA structure: possible alternative splicing
 A:Reference number: A93731; MUID:82014939
 A:Accession: A93731
 A:Molecule type: DNA
 A:Residues: 1-217 <DEN>
 A:Cross-references: GB:V00520
 A:Note: The 20K short form somatotropin lacks residues 58-72 (32-46 in the active hormone)
 R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinias, R.E.; Seeburg, P.
 Genomics 4, 479-497, 1989
 A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
 A:Reference number: A32435; MUID:89307277
 A:Accession: A32435
 A:Molecule type: DNA
 A:Residues: 1-217 <CHE>
 A:Cross-references: GB:J03071; NID:g183148; PIDN:AAA52549.1; PID:g183149
 R:Roskam, W.; Rougeon, F.
 Nucleic Acids Res. 7, 305-320, 1979
 A:Title: Molecular cloning and nucleotide sequence of the human growth hormone structure
 A:Reference number: A93694; MUID:80034477
 A:Accession: A93694
 A:Molecule type: mRNA
 A:Residues: 1-217 <ROS>
 A:Cross-references: GB:V00519
 A:Note: 35-Pro was also found
 R:Marital, J.A.; Halliwell, R.A.; Baxter, J.D.; Goodman, H.M.
 Science 205, 602-607, 1979
 A:Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
 A:Reference number: A94247; MUID:79203293
 A:Accession: A94247
 A:Molecule type: mRNA
 A:Residues: 1-217 <MAR>
 R:Li, C.H.; Dixon, J.S.; Liu, W.K.
 Arch. Biochem. Biophys. 133, 70-91, 1969
 A:Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.
 A:Reference number: A90048; MUID:69289202
 A:Contents: annotation
 R:Li, C.H.; Dixon, J.S.
 Arch. Biochem. Biophys. 146, 233-236, 1971
 A:Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: re
 A:Reference number: A90051; MUID:72143935
 A:Accession: A90051
 A:Molecule type: protein
 A:Residues: 27-94; 96-217 <LIC>
 R:Niall, H.D.
 Nature New Biol. 230, 90-91, 1971
 A:Title: Revised primary structure for human growth hormone.
 A:Reference number: A93397; MUID:71139765
 A:Accession: A93397
 A:Molecule type: protein
 A:Residues: 27-51 <NIA>
 R:Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
 Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971

A:Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution
 A:Reference number: A93778; MUID:71153968
 A:Accession: A93778
 A:Molecule type: protein
 A:Residues: 119-120;157-159 <NI2>
 R:Niall, H.D.
 in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths,
 A:Title: The chemistry of the human lactogenic hormones.
 A:Reference number: A94427
 A:Contents: annotation; somatotropin revision
 R:Bewley, T.A.; Dixon, J.S.; Li, C.H.
 Int. J. Pept. Protein Res. 4, 281-287, 1972
 A:Title: Sequence comparison of human pituitary growth hormone, human chorionic somat
 A:Reference number: A91764; MUID:73092028
 A:Accession: A91764
 A:Molecule type: protein
 A:Residues: 27-217 <BEW>
 R:Lewis, U.J.; Bonevald, L.F.; Lewis, L.J.
 Biochem. Biophys. Res. Commun. 92, 511-516, 1980
 A:Title: The 20,000-dalton variant of human growth hormone: location of the amino aci
 A:Reference number: A90217; MUID:80130196
 A:Contents: somatotropin, 20K short variant
 A:Accession: A90217
 A:Molecule type: protein
 A:Residues: 46-57;73-80 <LEW>
 R:Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.;
 J. Biol. Chem. 256, 2395-2401, 1981
 A:Title: The 20,000 molecular weight variant of human growth hormone. Preparation and
 A:Reference number: A92311; MUID:8117361
 A:Contents: somatotropin, 20K short variant
 A:Accession: A92311
 A:Molecule type: protein
 A:Residues: 27-57;73-79 <CHA>
 R:Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
 J. Protein Chem. 2, 425-436, 1983
 A:Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
 A:Reference number: A61466
 A:Accession: A61466
 A:Molecule type: protein
 A:Residues: 27-69 <SIN>
 A:Note: growth hormone 5K peptide has insulin potentiating activity; its physiological
 R:Robson, V.M.J.; Rae, I.D.; NG, F.
 Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
 A:Title: Identification of the aspartimide structure in a previously-reported peptide
 A:Reference number: S09685; MUID:90334745
 A:Accession: S09685
 A:Molecule type: protein
 A:Residues: 27-34,'L',36-47 <ROB>
 R:de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
 Science 255, 306-312, 1992
 A:Title: Human growth hormone and extracellular domain of its receptor: crystal struc
 A:Reference number: A41728; MUID:92196577
 A:Contents: annotation; X-ray crystallography, 2.8 angstroms
 A:Note: the structure of the complex with growth hormone receptor is described
 R:Gray, G.L.; Balridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
 Gene 39, 247-254, 1985
 A:Title: Periplasmic production of correctly processed human growth hormone in Escher
 A:Reference number: I41126; MUID:86137393
 A:Accession: I41126
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-26 <RES>
 A:Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159
 C:Comment: The gene for this hormone is transcribed only in somatotrophic cells of th
 C:Comment: About 90% of somatotropin is the 22K long form.
 C:Genetics:
 A:Gene: GDB:GH1
 A:Cross-references: GDB:119982; OMIM:139250
 A:Map position: 17q23.1-17q23.3
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; pituitary
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F:27-217/Product: somatotropin 1, long form #status experimental <SOL>
F:27-69/Product: growth hormone 5K peptide #status experimental <SKP>
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F:79-191,208-215/Disulfide bonds: #status experimental

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Matches 109; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

Qy 4 TVPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPTPS 63
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 29 TIPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPTPS 88
Qy 64 NMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHLLKDLREGIQ 123
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 89 NREETQOKSNLELRISLLIQSWLEPVQLSRFANSLVYGASDSNVYDLLKDLREGIQ 148

Qy 124 TLMGRLEDGSPR 135
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 149 TLMGRLEDGSPR 160

RESULT 5
I67410
somatotropin - rhesus macaque
N:Alternate names: growth hormone
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67410; A05094
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomotropin-related complementar
A:Reference number: I53267; MUID:94008724
A:Accession: I67410
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g293115
R:Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.
Arch. Biochem. Biophys. 245, 287-291, 1986
A:Title: The primary structure of monkey pituitary growth hormone.
A:Reference number: A05094; MUID:86129460
A:Accession: A05094
A:Molecule type: protein
A:Residues: 27-99,'Q',101-178,'D',180-217 <LIC>
A:Note: the monkey species is not identified in the reference
R:Raben, M.S.
Science 125, 883-884, 1957
A:Title: Preparation of growth hormone from pituitaries of man and monkey.
A:Reference number: A44774
A:Contents: annotation; identification of source organism
C:Superfamily: prolactin

Query Match 79.7%; Score 553; DB 2; Length 217;
Best Local Similarity 82.6%; Pred. No. 1.2e-45;
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Qy 4 TVPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPTPS 63
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Db 29 TIPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPTPS 88
Qy 64 NMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHLLKDLREGIQ 123
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Db 89 NREETQOKSNLELRISLLIQSWLEPVQLSRFANSLVYGTSYSDVYDLLKDLREGIQ 148

Qy 124 TLMGRLEDGSPR 135
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 149 TLMGRLEDGSPR 160

RESULT 6
I67409
chorionic somatomotropin-3 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)

I67408
chorionic somatomotropin-2 - rhesus macaque (fragment)
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I67408
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomotropin-related complemen
A:Reference number: I53267; MUID:94008724
A:Accession: I67408
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-212 <RES>
A:Cross-references: GB:L16553; NID:g293110; PIDN:AAA18840.1; PID:g293111
C:Superfamily: prolactin

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Db 22 VPSVPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPT 81
Qy 62 PSNMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHLLKDLREG 121
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 82 PSNLEETQOKSNLELRISLLIQSWLEPVQLSRFANLVYDTSDDYHLLKDLREG 141
Qy 122 IOTLMGRLEDGSPR 135
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 142 IETLMWRLEDGIPR 155

RESULT 7
I53267
chorionic somatomotropin-1 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I53267
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomotropin-related complemen
A:Reference number: I53267; MUID:94008724
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A:Molecule type: mRNA
A:Residues: 1-217 <RES>
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C:Superfamily: prolactin

Query Match 77.2%; Score 536; DB 2; Length 217;
Best Local Similarity 76.9%; Pred. No. 4.9e-44;
Matches 103; Conservative 16; Mismatches 15; Indels 0; Gaps 0;

Qy 2 VOTVPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPT 61
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Db 27 VPSVPLSRFLDHAMLAQAHRAHQAIDTYQEFETIYPKDQKYSFLHDSOTSFSDSIPT 86
Qy 62 PSNMEETQOKSNLELRISLLIESWLEPVRLSRFANLVYDTSDDYHLLKDLREG 121
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 87 PSNLEETQOKSNLELRISLLIQSWLEPVQLSRFANLVYDTSDDYHLLKDLREG 146
Qy 122 IOTLMGRLEDGSPR 135
I:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 147 IETLMWRLEDGIPR 160

RESULT 8
I67409
chorionic somatomotropin-3 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)

A, little: identification of placental human growth hormone as the growth

QY	125	LMGRLEDGSPR	135
Db	122	LMRELEDGSPR	132

RESULT	15
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PN0140

somatotropin - sei whale

N: Alternate names: growth hormone

C:Species: *Balaenoptera borealis* (sei whale)

C,species: *Balaenoptera borealis* (sei whale)
C:Date: 07-May-1993 #sequence revision 07-May-1993 #text change 07-May-1999

C: Accession: PN0140

C; ACCESSION: FN0140
R: Yudaev, N. A.: Pankov, Y. A.: Bulatov, A. A.: Osipova, T. A.

R; Iudkev, N.A.; Pankov, Y.A.;
Blokhl'mia 47. 1059-1069. 1982

BIODIVERSITY 47, 1039-1069, 1982
A:Title: Amino acid sequence of seiwhale somatotronin

A/PIC16: Amino acid sequence of seiwhale
A: Reference number: PN0140: MUID:830000569

A: Reference number:
A: Accession: PN0140

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A: Molecule type: protein

A;Molecule type: protein
A:Residues: 1-190 <vmd>

A;RESIDUES: I-I90 <YUD>
A;Note: article in Russian with English abstract

A; Note: article in Russian
C: superfamily: prolactin

C;superfamily: prolactin

C; keywords: growth factor; hormone
E: 52-163 180-188/nisulfide bonds; #status prod; cited

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QY 3 VFESKTF DHATMQL QANNAHQ LAID I IQ EEEET IFNDQNISF LHDQSIFSFSDSIPPSN 09
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4 MPLSSLFANVLRQHLHEIAADTYKEEFERAYTPEGORY-FIIONAOSTGGESEVTPMPAN 62

DD 4 MFLSSLFANAVLRAQHHLHELAAADTINEFFERAYIPEGQRY-FLQNAQSTGCFSEVIFTPAN 0Z

0v 65 MEETOOKSNI.EI.I.RTSL.I.I.TFSWI.FPVREI.RSMFANNI.VYDTS.DSDDYH.I.KDI.EECIOT 12A

QY 63 MEETQKSNLELLRISLLTIESWLEFPVRF LRSMFANNLVYD'TSDSDDYALLKRDLEEGIQ'I 124

63 KDFACOPSDFVLLPESLI I OSWI CPVOEI EKAYANEI VECTSDR-VVEK KDI EECIA 12

DB 63 KDEAQQRSDVLELRF'SLLLIQSWLGPVQFLEKAYANELVFGTSDR-VYERKLDLEEGIQ 121

03 125 T.MCPT.EDCSPP 135

QY I25 LMGRLEDGSPR
11 11111111

Search completed: September 25, 2002, 10:01:10
Job time: 148 sec


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RL Nature 270:494-499(1977).
RN [7]
RP SEQUENCE OF 27-217.
RX MEDLINE=73201971; PubMed=4712450;
RA Li C.H., Dixon J.S., Chung D.;
RT "Amino acid sequence of human chorionic somatomammotropin.";
RL Arch. Biochem. Biophys. 155:95-110(1973).
RN [8]
RP SEQUENCE OF 27-117.
RX MEDLINE=72016313; PubMed=5286363;
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RT "Amino-acid sequence of human placental lactogen.";
RL Nature New Biol. 233:59-61(1971).
RN [9]
RP ERRATUM.
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;
RL Nature New Biol. 235:64-64(1972).
RN [10]
RP INTERCHAIN DISULFIDE BONDS.
RX MEDLINE=79173081; PubMed=438159;
RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;
RT "Identification of the interchain disulfide bonds of dimeric human placental lactogen.";
RL J. Biol. Chem. 254:3782-3787(1979).
CC -1- FUNCTION: SIMILAR TO THAT OF SOMATOTROPIN.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- MISCELLANEOUS: THE SEQUENCE OF CSH-1 IS SHOWN.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL; V00573; CAA23836.1; -
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DR EMBL; K02401; AAA52115.1; -
DR EMBL; M15894; AAA52116.1; -
DR EMBL; J03071; AAA52551.1; -
DR EMBL; J00118; AAA98621.1; -
DR PIR; A01512; LCHUC
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DR PIR; C32435; C32435.
DR PIR; E32435; E32435.
DR HSSP; P01241; 1HWH.
DR MIW; 150200; -.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Placenta; Multigene family; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 LACTOGEN.
FT DISULFID 79 191
FT DISULFID 208 215
FT DISULFID 208 208
FT DISULFID 215 215
FT VARIANT 3 3
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FT CONFLICT 84 84
FT CONFLICT 95 95
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Query Match 97.3%; Score 675; DB 1; Length 217;

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DB 27 VQTVPVLSRLFDHAMLQAHQALADITYQFEFTYTPKDQYSLHDSQTSFSDSIPT 86
QY 62 PSNMEETQOKSNLELLRISILLIESWLEPVRLSRMFANLVYDTSDDYHLLKDLERG 121
DB 87 PSNMEETQOKSNLELLRISILLIESWLEPVRLSRMFANLVYDTSDDYHLLKDLERG 146
QY 122 IQTLMGRLDGSPR 135
DB 147 IQTLMGRLDGSR 160
RESULT 2
SOMA_HUMAN
ID AC P01241; STANDARD; PRT; 217 AA.
DT 21-JUL-1986 (Rel. 01, Created)
DD 01-MAR-1992 (Rel. 21, Last sequence update)
DD 16-OCT-2001 (Rel. 40, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=82014939; PubMed=6269091;
RA Denoto F.M., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=80034477; PubMed=386281;
RA Roskam W., Rougeon F.;
RT "Molecular cloning and nucleotide sequence of the human growth
RT hormone structural gene.";
RL Nucleic Acids Res. 7:305-320(1979).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=79203293; PubMed=377496;
RA Martial J.A., Hallewell R.A., Baxter J.D., Goodman H.M.;
RT "Human growth hormone: complementary DNA cloning and expression in
RT bacteria.";
RL Science 205:602-607(1979).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
RA Gelin R.E., Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [5]
RP SEQUENCE OF 27-217.
RX MEDLINE=69289202; PubMed=5810834;
RA Li C.H., Dixon J.S., Liu W.-K.;
RT "Human pituitary growth hormone. XIX. The primary structure of the
RT hormone.";
RL Arch. Biochem. Biophys. 133:70-91(1969).
RN [6]
RP SEQUENCE OF 27-217, AND REVISIONS.
RX MEDLINE=72143935; PubMed=5144027;
RA Li C.H., Dixon J.S.;
RT "Human pituitary growth hormone. 32. The primary structure of the
RT hormone: revision.";
RL Arch. Biochem. Biophys. 146:233-236(1971).
RN [7]

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RP SEQUENCE OF 27-51 AND 104-120.
RX MEDLINE=71139765; PubMed=5279046;
RA Niall H.D.;
RT "Revised primary structure for human growth hormone.";
RL Nature New Biol. 230:90-91(1971).
RN [8]
RP REVISION.
RX MEDLINE=73092028; PubMed=4675454;
RA Bewley T.A., Dixon J.S., Li C.H.;
RT "Sequence comparison of human pituitary growth hormone, human
RT chorionic somatomotropin, and ovine pituitary growth and
RT lactogenic hormones.";
RL Int. J. Pept. Protein Res. 4:281-287(1972).
RN [9]
RP REVISION.
RA Niall H.D.;
RT "The chemistry of the human lactogenic hormones.";
RL (In) Griffiths K. (eds.);
RL Prolactin and carcinogenesis., Proc. fourth tenovus workshop prolactin,
RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
RN [10]
RP REVISIONS TO 119-120 AND 157-159.
RX MEDLINE=71153968; PubMed=5279528;
RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
RT "Sequences of pituitary and placental lactogenic and growth hormones:
RT evolution from a primordial peptide by gene reduplication.";
RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
RN [11]
RP SEQUENCE OF 27-57 AND 73-79.
RX MEDLINE=81117361; PubMed=7462247;
RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,
RA Turner C., Cary F.D., Crane-Robinson C.;
RT "The 20,000 molecular weight variant of human growth hormone.
RT Preparation and some physical and chemical properties.";
RL J. Biol. Chem. 256:2395-2401(1981).
RN [12]
RP SEQUENCE OF 46-57 AND 73-80.
RX MEDLINE=80130196; PubMed=7356479;
RA Lewis U.J., Bonevald L.F., Lewis L.J.;
RT "The 20,000-dalton variant of human growth hormone: location of the
RT amino acid deletions.";
RL Biochem. Biophys. Res. Commun. 92:511-516(1980).
RN [13]
RP 3D-STRUCTURE MODELING.
RX MEDLINE=88190073; PubMed=3447173;
RA Cohen F.E., Kuntz I.D.;
RT "Prediction of the three-dimensional structure of human growth
RT hormone.";
RL Proteins 2:162-166(1987).
RN [14]
RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
RX MEDLINE=92196577; PubMed=1349776;
RA de Vos A.M., Ullsch M., Kossiakoff A.A.;
RT "Human growth hormone and extracellular domain of its receptor:
RT crystal structure of the complex.";
RL Science 255:306-312(1992).
RN [15]
RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
RX MEDLINE=95075462; PubMed=7984244;
RA Somers W., Ullsch M., de Vos A.M., Kossiakoff A.A.;
RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
RL Nature 372:478-481(1994).
RN [16]
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,
RA Pavlovsk A.G., Wlodawer A.;
RT "The crystal-structure of wild-type growth-hormone at 2.5-A
RT resolution.";
RL Protein Pept. Lett. 2:333-340(1995).
RN [17]
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
RX MEDLINE=97113023; PubMed=8943276;
RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,
RA Norstedt G.;
RT "Crystal structure of an antagonist mutant of human growth hormone,
RT G120R, in complex with its receptor at 2.9-A resolution.";
RL J. Biol. Chem. 271:32197-32203(1996).
RN [18]
RP FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
RT CONTROL.
RN [19]
RP SUBCELLULAR LOCATION: Secreted.
RN [20]
RP ALTERNATIVE PRODUCTS: A 20 kDa SHORT VARIANT WHICH LACKS 58-72 IS
RT PRODUCED AS THE RESULT OF SPLICING AT THE ALTERNATE JUNCTION
RT OF THE SECOND INTRON.
RN [21]
RP DISEASE: DEFECTS IN GH1 ARE A CAUSE OF PITUITARY DWARFISM I AND
RT IV.
RN [22]
RP PHARMACEUTICAL: Available under the names Nutropin or Protropin
RT (Genentech), Norditropin (Novo Nordisk), Genotropin (Pharmacia
RT Upjohn), Humatrope (Eli Lilly) and Saizen or Serostim (Serono).
RT Used for the treatment of growth hormone deficiency and for
RT Turner's syndrome.
RN [23]
RP SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
RN [24]
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RT or send an email to license@isb-sib.ch).
RN [25]
RP EMBL; V00519; CAA23778.1; -;
DR EMBL; J03071; AAA52549.1; -;
DR EMBL; M13438; AAA98618.1; -;
DR EMBL; A12770; CAA01057.1; -;
DR EMBL; A00469; CAA00065.1; -;
DR PIR; A01510; STHU.
DR PIR; A32435; A32435.
DR PDB; 3HRH; 30-APR-94.
DR PDB; 1HUN; 31-JAN-94.
DR PDB; 1HGU; 07-DEC-95.
DR PDB; 1HWG; 19-NOV-97.
DR PDB; 1LWH; 19-NOV-97.
DR PDB; 1AXI; 28-JAN-98.
DR PDB; 1A22; 29-APR-98.
DR PDB; 1BP3; 23-SEP-98.
DR MIM; 139250; -;
DR MIM; 262400; -;
DR MIM; 262650; -;
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Pituitary; Hormone; Alternative splicing; Signal; 3D-structure;
KW Dwarfism; Pharmaceutical; Polymorphism.
FT SIGNAL 1 26
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191
FT DISULFID 208 215
FT VARSPIC 58 72
FT VARIANT 3 3
FT VARIANT 105 105
FT VARIANT 136 136
FT VARIANT 136 136
FT HELIX 32 61
FT HELIX 64 72
FT TURN 76 77
FT TURN 80 83
FT HELIX 90 94
FT TURN 95 95
FT TURN 98 110
FT TURN 111 114
FT HELIX 115 125

ID	SOMV_HUMAN	STANDARD;	PRT;	217 AA.
AC	P01242;			
AT	21-JUL-1986 (Rel. 01, Created)			
DC	01-AUG-1991 (Rel. 19, Last sequence update)			
DT	16-OCT-2001 (Rel. 40, Last annotation update)			
DE	Growth hormone variant I precursor (GH-V) (Placenta-specific growth hormone).			
DE				
DE				
GN	GH2.			
OS	Homo sapiens (Human).			
OS	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OC	NCBI_TaxID=9606;			
RP	[1]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=89307277; PubMed=2744760;			
RA	Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,			
RA	Geilinas R.E., Seeburg P.H.;			
RT	"The human growth hormone locus: nucleotide sequence, biology, and evolution.";			
RL	Genomics 4:479-497(1989).			
RL				
RP	[2]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=88243769; PubMed=3379057;			
RA	Cooke N.E., Ray J., Emery J.G., Liehaber S.A.;			
RT	"Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.";			
RL	J. Biol. Chem. 263:9001-9006(1988).			
RL				
RP	[3]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=83182010; PubMed=7169009;			
RA	Seeburg P.H.;			
RT	"The human growth hormone gene family: nucleotide sequences show recent divergence and predict a new polypeptide hormone.";			
RL	DNA 1:239-249(1982).			
RL				
RP	[4]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=89024984; PubMed=2460050;			
RA	Igout A., Scippo M.L., Franckne F., Hennen G.;			
RT	"Cloning and nucleotide sequence of placental hGH-V cDNA.";			
RL	Arch. Int. Physiol. Biochim. 96:63-67(1988).			
CC	-1- SUBCELLULAR LOCATION: Secreted.			
CC	-1- ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED			
CC	ALTERNATIVE SPLICING OF THE SAME GENE.			
CC	-1- TISSUE SPECIFICITY: THIS PROTEIN SEEMS TO BE EXPRESSED IN THE			
CC	PLACENTA.			
CC	-1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.			
CC				
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CC	entities requires a license agreement (See http://www.isb-sib.ch/ar			
CC	or send an email to license@isb-sib.ch).			
CC				
DR	EMBL; K00470; AAA98619.1; -			
DR	EMBL; J03756; AAB59548.1; -			
DR	EMBL; J03071; AAA52552.1; -			
DR	EMBL; M38451; AAA35891.1; -			
DR	PIR; A01511; STHUV.			
DR	PIR; B28072; B28072.			
DR	PIR; D32435; D32435.			
DR	HSP; P01241; IHWH.			
DR	MIM; 139240; -			
DR	InterPro; IPR001400; SOMATOTROPIN.			
DR	Pfam; PF00103; hormone; 1.			
DR	PRINTS; PR00836; SOMATOTROPIN.			
DR	PROSITE; PS00266; SOMATOTROPIN.1; 1.			
DR	PROSITE; PS00338; SOMATOTROPIN.2; 1.			
KW	Hormone; Placenta; Signal; Glycoprotein; Alternative splicing.			
FT	SIGNAL 1 26			
FT	CHAIN 27 217			
FT	GROWTH HORMONE VARIANT I			

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FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT CARBOHYD 166 166 N-LINKED (GLCNAC. . .) (POTENTIAL).
FT CONFLICT 35 35 L -> P (IN REF. 3).
FT CONFLICT 109 109 T -> I (IN REF. 2 AND 4).
SQ SEQUENCE 217 AA; 24987 MW; 40FE8620A5138D1C CRC64;

Query Match 71.9%; Score 499; DB 1; Length 217;
Best Local Similarity 75.8%; Pred. No. 2.9e-42;
Matches 100; Conservative 13; Mismatches 19; Indels 0; Gaps 0;

QY 4 TVPLSRLEFHAMLOAHRAHQAIDTYQEFETYPKDKYSFLHDSQTSFSFSDSIPTPS 63
Db 29 TIPLSRLEFHAMLOAHRAHQAIDTYQEFETYPKDKYSFLHDSQTSFSFSDSIPTPS 88
QY 64 NNEETQKSNLELLRISLLILLESWLEPVRLSRMFANLVYDTSDDYHLKLDLEGIQ 123
Db 89 NRVKQKSNLELLRISLLILLESWLEPVQLRSVFANSLVIGASDSNVYRHLKLDLEGIQ 148
QY 124 TLMGRLEDGSPR 135
Db 149 TLMWRLEDGSPR 160

RESULT 7
SOMV_MACMU
ID SOMV_MACMU STANDARD; PRT; 217 AA.
AC Q07370; Q28494;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Growth hormone variant I precursor (GH-V) (Placenta-specific growth hormone).
DE GH2.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;
OC Cercopithecinae; Macaca.
OX NCBI_TaxID=9344;
RN [1]
RP SEQUENCE FROM N.A.
RA Golos T.G.;
RL Submitted (JAN-1994) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Placenta;
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G.; Durning M.; Fisher J.M.; Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC -|- SUBCELLULAR LOCATION: Secreted (By similarity).
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL; U02293; AAA03391.1; -
DR EMBL; L16555; AAA20180.1; -
DR HSP; P01241; LHCU
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; Hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Placenta; Signal; Glycoprotein.
```

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FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 217 GROWTH HORMONE VARIANT I.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT CONFLICT 57 57 L -> F (IN REF. 2).
FT CONFLICT 152 152 E -> G (IN REF. 2).
SQ SEQUENCE 217 AA; 25221 MW; 8DB116CBC24EA090 CRC64;

Query Match 68.2%; Score 473; DB 1; Length 217;
Best Local Similarity 71.2%; Pred. No. 1.1e-39;
Matches 94; Conservative 15; Mismatches 23; Indels 0; Gaps 0;

QY 4 TVPLSRLEFHAMLOAHRAHQAIDTYQEFETYPKDKYSFLHDSQTSFSFSDSIPTPS 63
Db 29 TIPLSRLEFHAMLOAHRAHQAIDTYQEFETYPKDKYSFLHDSQTSFSFSDSIPTPS 88
QY 64 NNEETQKSNLELLRISLLILLESWLEPVRLSRMFANLVYDTSDDYHLKLDLEGIQ 123
Db 89 NKEETQKSNLELLRISLLILLESWLEPVQLRSVFANHLVHTNSFDIYLYLKKLEGIQ 148
QY 124 TLMGRLEDGSPR 135
Db 149 TLMWRLEDGSPR 160

RESULT 8
SOMW_HUMAN
ID SOMW_HUMAN STANDARD; PRT; 256 AA.
AC P09587;
DT 01-MAR-1989 (Rel. 10, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Growth hormone variant II precursor (GH-V2).
DE GH2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
RA Gelinas R.E., Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and evolution.";
RL Genomics 4:479-497(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=88243769; PubMed=3379057;
RA Cooke N.E., Ray J., Emery J.G., Liebhauer S.A.;
RT "Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.";
RL J. Biol. Chem. 263:9001-9006(1988).
CC -|- SUBCELLULAR LOCATION: Secreted.
CC -|- ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED BY ALTERNATIVE SPLICING OF THE SAME GENE.
CC -|- MISCELLANEOUS: THE C-TERMINAL REGION OF THIS PROTEIN IS DIFFERENT FROM THAT OF ALL OTHERS PROTEINS OF THIS FAMILY.
CC -|- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC -----
DR EMBL; J03756; AAB59547.1; -
DR PIR; A28072; A28072.
DR HSP; P01241; LHUV.
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DR MIM; 139240; -
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; FALSE_NEG.
KW Hormone; Placenta; Signal; Alternative splicing.
FT SIGNAL 1 26
FT CHAIN 27 256 GROWTH HORMONE VARIANT II.
FT CONFLICT 237 240 AEAG -> EAGR (IN REF. 2).
SQ SEQUENCE 256 AA; 28778 MW; 4605AD39FD8C44F6 CRC64;

Query Match 66.5%; Score 461.5; DB 1; Length 256;
Best Local Similarity 72.0%; Pred. No. 1.8e-38;
Matches 95; Conservative 14; Mismatches 22; Indels 1; Gaps 1;

QY 4 TVPLSLRFDHMLQAHRAHQLAIDTYQEFEEYIPKDQKYSFLHDSOTSFSFSDSIPTPS 63
DQ :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 29 TIFSLRFDHMLQAHRAHQLAIDTYQEFEEYIPKDQKYSFLHDSOTSFSFSDSIPTPS 88
QY 64 NMEETQOKSNLELLRLISLLIESWLEPVFLRSMFANNLVYDTSDDYHLKDLKEEGIQ 123
DQ :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 89 NRVKQOKSNLELLRLISLLIQSWLPGVQLSRIFLNSLMFGTSDR-VYEKLDLEEGIOA 147
QY 124 TLMG-RLEDGSP 134
DQ :|||:|:|:|
Db 149 TLMWVRVAGPI 160

RESULT 9
SOMA_MESAU STANDARD; PRT; 216 AA.
AC P37886;
DT 01-OCT-1994 (Rel. 30, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 01-FEB-1996 (Rel. 33, Last annotation update)
DE Somatotropin precursor (growth hormone).
GN GH1 OR GH.
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=92063850; PubMed=1954881;
RA Southard J.N., Sanchez-Jimenez F., Campbell G.T., Talamantes F.;
RT "Sequence and expression of hamster prolactin and growth hormone messenger RNAs";
RL Endocrinology 129:2965-2971(1991).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL; S66299; AAB20368.1; -
DR PIR; B49159; B49159.
DR HSP; P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26
BY SIMILARITY.
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```
FT CHAIN 27 216 SOMATOTROPIN.
FT DISULFID 78 189 BY SIMILARITY.
FT DISULFID 206 214 BY SIMILARITY.
SQ SEQUENCE 216 AA; 24690 MW; 3B69CE32AB6F1166 CRC64;

Query Match 56.1%; Score 389; DB 1; Length 216;
Best Local Similarity 59.5%; Pred. No. 2.1e-31;
Matches 78; Conservative 23; Mismatches 28; Indels 2; Gaps 2;

QY 5 VPLSLRFDHMLQAHRAHQLAIDTYQEFEEYIPKDQKYSFLHDSOTSFSFSDSIPTPSN 64
DQ :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 30 MPLSLFANAVLRAQHLQLAADTYKEFERAYIPEGQYIS-IQNAQAFCFSEIIPATG 88
QY 65 MEETQOKSNLELLRLISLLIESWLEPVFLRSMFANNLVYDTSDDYHLKDLKEEGIQ 124
DQ :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 89 KEAQQRSDMELLRFSLLLIQSWLPGVQLSRIFLNSLMFGTSDR-VYEKLDLEEGIOA 147
QY 125 LMGRLEDGSPR 135
DQ :|||:|:|:|
Db 148 LMQELEDGSPR 158

RESULT 10
SOMA_LAMPA STANDARD; PRT; 190 AA.
AC P37885;
DT 01-OCT-1994 (Rel. 30, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin (growth hormone).
GN GH1.
OS Lama guanicoe pacos (Alpaca).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Tylopoda; Camelidae; Lama.
OX NCBI_TaxID=30538;
RN [1]
RP SEQUENCE.
RX MEDLINE=92104767; PubMed=1761365;
RA de Jimenez Bonino M.B., de Nue I.A., Ore R., Sanchez D., Ferrara P.,
RA Capdevielle J., Cascone O.;
RT "Primary structure of alpaca growth hormone.";
RL Int. J. Pept. Protein Res. 38:193-197(1991).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR PIR; A61584; A61584.
DR HSP; P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary.
FT DISULFID 52 163 BY SIMILARITY.
FT DISULFID 180 188 BY SIMILARITY.
SQ SEQUENCE 190 AA; 21789 MW; A7C67266A8B96A10 CRC64;

Query Match 55.9%; Score 388; DB 1; Length 190;
Best Local Similarity 59.5%; Pred. No. 2.2e-31;
Matches 78; Conservative 23; Mismatches 28; Indels 2; Gaps 2;

QY 5 VPLSLRFDHMLQAHRAHQLAIDTYQEFEEYIPKDQKYSFLHDSOTSFSFSDSIPTPSN 64
DQ :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 4 MPLSLFANAVLRAQHLQLAADTYKEFERAYIPEGQYIS-IQNAQAFCFSEIIPATG 62
QY 65 MEETQOKSNLELLRLISLLIESWLEPVFLRSMFANNLVYDTSDDYHLKDLKEEGIQ 124
DQ :|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:
Db 63 KDEAQQRSDVLLRFSLLLIQSWLPGVQLSRIFLNSLVFGTSDR-VYEKLDLEEGIOA 121
QY 125 LMGRLEDGSPR 135
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RN SEQUENCE FROM N.A.
RX MEDLINE=85261358; PubMed=2991252;
RA Linzer D.I.H., Talamantes F.;
RT "Nucleotide sequence of mouse prolactin and growth hormone mRNAs and
RL expression of these mRNAs during pregnancy.";
RN J. Biol. Chem. 260:9574-9579(1985).
[2]
RN SEQUENCE FROM N.A.
RC STRAIN=EZTDU; TISSUE=Liver;
RX MEDLINE=96194803; PubMed=8647448;
RA Das P., Meyer L., Seyfert H.-M., Brockmann G., Schwerin M.;
RT "Structure of the growth hormone-encoding gene and its promoter in
RL mice.";
RN Gene 169:209-213(1996).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC or send an email to license@isb-sib.ch).
-----
DR EMBL: X02891; CAA26650.1; -
DR EMBL: Z46663; CAA86658.1; -
DR PIR: B23911; STMS
DR HSSP: P01246; 1BST.
DR MGD: MGI:95707; GH.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF0103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 BY SIMILARITY.
FT CHAIN 27 216 SOMATOTROPIN.
FT DISULFID 78 189 BY SIMILARITY.
FT DISULFID 206 214 BY SIMILARITY.
SQ SEQUENCE 216 AA; 24716 MW; 98666A3AE25D56FC CRC64;

Query Match 55.28; Score 383; DB 1; Length 216;
Best Local Similarity 58.08; Pred. No. 8.1e-31;
Matches 76; Conservative 24; Mismatches 29; Indels 2; Gaps 2;

QY 5 VPLSLFLDHAHLQAHLAIDTYQFEETYIPKQKYSLFLHDSOTSPSPDSIPTPSN 64
DB :||| || -||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
30 MPLSLFSNVLRAQHLQAADTYKEERAYIPEGQVYS-IONQAAPCFSETIPAPTG 88
QY 65 MEETQKSNLELLRLISLLIESWLEPVRFLRSMFANNLVDTSDSDDYHLLKDLLEG 124
DB || ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
89 KEAAQORTDMLRFLSLLIQSLWLGVPQFLSRFTNSLMFTSDR-VYEKLKDLLEG 147
QY 125 LMGRLEDGSPR 135
DB || ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
148 LMQELEDGSPR 158
```

Search completed: September 25, 2002, 10:04:42
Job time: 230 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:59:57 ; Search time 26.92 Seconds
(without alignments)
867.545 Million cell updates/sec

Title: US-09-819-094-18
Perfect score: 694
Sequence: 1 MQVTPLSLRFLDHLMLQHR.....KDLEBGIOTLWGRLEDGSPR 135

Scoring table:

BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

- SPTREMBL19:*
- 1: sp_archaea:*
 - 2: sp_bacteria:*
 - 3: sp_fungi:*
 - 4: sp_human:*
 - 5: sp_invertebrate:*
 - 6: sp_mammal:*
 - 7: sp_mhc:*
 - 8: sp_organelle:*
 - 9: sp_phage:*
 - 10: sp_plant:*
 - 11: sp_rodent:*
 - 12: sp_virus:*
 - 13: sp_vertebrate:*
 - 14: sp_unclassified:*
 - 15: sp_rviro:*
 - 16: sp_bacteriap:*
 - 17: sp_archaeap:*

pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	675	97.3	217	Q14407	Q14407 homo sapien
2	554	79.8	217	Q16631	Q16631 homo sapien
3	553	79.7	167	P78451	P78451 homo sapien
4	536	77.2	212	Q07368	Q07368 macaca mula
5	536	77.2	217	Q07367	Q07367 macaca mula
6	523	75.4	217	Q07369	Q07369 macaca mula
7	469	67.6	199	Q14406	Q14406 homo sapien
8	466	67.1	245	Q14644	Q14644 homo sapien
9	430.5	62.0	202	Q14643	Q14643 homo sapien
10	404.5	58.3	171	Q3UNL5	Q3UNL5 homo sapien
11	398	57.3	216	Q9JRM4	Q9JRM4 cavia porce
12	388	55.9	190	Q9JRG0	Q9JRG0 cavia porce
13	381	54.9	179	Q9HB21	Q9HB21 homo sapien
14	379	54.6	217	Q28957	Q28957 sus scrofa
15	377	54.3	216	Q9R2C3	Q9R2C3 mus musculus
16	374	53.9	216	Q70615	Q70615 spalax leuc

17	371	53.5	192	6	Q9TU21	Q9TU21 capra hircu
18	370	53.3	178	6	Q95M35	Q95M35 tarsius ban
19	370	53.3	192	6	Q9TQM9	Q9TQM9 bos indicus
20	369	53.2	204	6	Q95205	Q95205 ovis aries
21	364	52.4	217	6	Q9BEC0	Q9BEC0 tragulus ja
22	364	52.4	217	6	Q9BEB9	Q9BEB9 tragulus ja
23	360	51.9	143	6	Q95240	Q95240 canis famil
24	360	51.9	178	6	Q95M36	Q95M36 tarsius syr
25	337	48.6	145	6	Q9BDR4	Q9BDR4 galago cras
26	326.5	47.0	218	13	Q9PU72	Q9PU72 cynops pyr
27	289	41.6	195	13	Q91386	Q91386 amia calva
28	254.5	36.7	110	6	Q9N265	Q9N265 bos taurus
29	199.5	28.7	140	13	Q90WE4	Q90WE4 gallus gall
30	183	26.4	187	13	Q98SR8	Q98SR8 megalobrama
31	183	26.4	188	13	Q98TT4	Q98TT4 megalobrama
32	183	26.4	210	13	Q90Z01	Q90Z01 mylopharyng
33	182	26.2	188	13	Q90283	Q90283 carassius a
34	182	26.2	210	13	Q91056	Q91056 hypophthalm
35	181.5	25.2	120	6	Q9TSG0	Q9TSG0 ovis aries
36	176	25.4	188	13	Q98SR7	Q98SR7 cyprinus ca
37	176	25.4	188	13	Q90W27	Q90W27 carassius a
38	176	25.4	188	13	Q90W26	Q90W26 carassius a
39	171	24.6	211	13	Q9W798	Q9W798 catia catia
40	170	24.5	210	13	Q90W77	Q90W77 catia catia
41	169	24.4	210	13	Q90W30	Q90W30 cirrhinus m
42	145	20.9	45	6	Q9TSF9	Q9TSF9 ovis aries
43	141	20.3	210	13	Q91160	Q91160 oncorhynch
44	139	20.0	187	13	Q91449	Q91449 seriola dum
45	132.5	19.1	204	13	Q90Y60	Q90Y60 sparus aura

ALIGNMENTS

RESULT 1

ID	Q14407	PRELIMINARY;	PRT;	217 AA.
AC	Q14407;			
DT	01-NOV-1996 (TREMBLrel. 01, Created)			
DT	01-NOV-1996 (TREMBLrel. 01, Last sequence update)			
DT	01-DEC-2001 (TREMBLrel. 19, Last annotation update)			
DE	CHORIONIC SOMATOMAMOTROPIN CS-2.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RN	SEQUENCE FROM N.A.			
RX	MEDLINE=89307277; PubMed=2744760;			
RA	Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,			
RA	Seeburg P.H.;			
RT	"The human growth hormone locus: nucleotide sequence, biology, and			
RT	evolution.";			
RL	Genomics 4:479-497(1989).			
RN	[2]			
RN	SEQUENCE FROM N.A.			
RX	MEDLINE=91102558; PubMed=1980158;			
RA	Vnencak-Jones C.L., Phillips J.A. III.;			
RT	"Hot spots for growth hormone gene deletions in homologous regions			
RT	outside of Alu repeats.";			
RL	Science 250:1745-1748(1990).			
DR	EMBL; J03071; AAA52553.1; -.			
DR	HSSP; P01241; 1A22.			
DR	InterPro; IPR001400; SOMATOTROPIN.			
DR	Pfam; PF00103; hormone; 1.			
DR	PROSITE; PR00836; SOMATOTROPIN.			
DR	PROSITE; PS00266; SOMATOTROPIN_1; 1.			
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.			
SQ	SEQUENCE 217 AA; 24994 MW; 39FAACDDB6B2E951 CRC64;			

Query Match 97.3%; Score 675; DB 4; Length 217;
Best Local Similarity 98.5%; Pred. No. 1.3e-58;

CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
 DR EMBL; L16553; AAA18840.1; -;
 DR HSSP; P01241; IAXI.
 DR InterPro; IPR001400; SOMATOTROPIN.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
 KW Pituitary; Hormone; Signal.
 FT NON_TER 1 1
 FT SIGNAL <1 ?
 FT CHAIN ? 212 SOMATOTROPIN 2.
 FT DISULFID 74 186 BY SIMILARITY.
 FT DISULFID 203 210 BY SIMILARITY.
 SQ SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;

Query Match 77.2%; Score 536; DB 6; Length 212;
 Best Local Similarity 76.9%; Pred. No. 5.7e-45;
 Matches 103; Conservative 16; Mismatches 15; Indels 0; Gaps 0;
 QY 2 VQTVPLSRFLDHAMLAQAHRAHOLAIDTYQEFETYPKDKYSLFHDSTSFSDSIPT 61
 DB 22 VPSVPLSRFLDHAMLAQAHRLHQLAFDYQEFEEAYIPKEKKHSLMENPQASFCFADSIPT 81
 QY 62 PSNMEETQOKSNLELLRISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLLKDLLEG 121
 DB 82 PSNLEETQOKSNLELLRISLLIQSWLEPVQFLSSVFANNLLHHTSDSDVHLLKDLLEG 141
 QY 122 IOTLMGRLEDGSPR 135
 DB 142 IETLMWRLEDGIPR 155

RESULT 5
 QY 007367 PRELIMINARY; PRT; 217 AA.
 AC 007367;
 DT 01-NOV-1996 (TRENBLrel. 01, Created)
 DT 01-NOV-1996 (TRENBLrel. 01, Last sequence update)
 DT 01-DEC-2001 (TRENBLrel. 19, Last annotation update)
 DE SOMATOTROPIN 1 PRECURSOR (GROWTH HORMONE 1).
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;
 OC Cercopitheidae; Macaca.
 OX NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=PLACENTA;
 RX MEDLINE=94008724; PubMed=8404617;
 RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
 RT "Cloning of four growth hormone/chorionic somatomotropin-related
 RT complementary deoxyribonucleic acids differentially expressed during
 RT pregnancy in the rhesus monkey placenta.";
 RL Endocrinology 133:1744-1752(1993).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.

CC -1- SUBCELLULAR LOCATION: SECRETED.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
 CC EMBL; L16552; AAA18839.1; -;
 DR HSSP; P01241; IAXI.
 DR InterPro; IPR001400; SOMATOTROPIN.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
 KW Pituitary; Hormone; Signal.
 FT SIGNAL 1 ?
 FT CHAIN ? 217 SOMATOTROPIN 1.
 FT DISULFID 79 191 BY SIMILARITY.
 FT DISULFID 208 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24942 MW; FF5AA8915131F2BC CRC64;

Query Match 77.2%; Score 536; DB 6; Length 217;
 Best Local Similarity 76.9%; Pred. No. 5.7e-45;
 Matches 103; Conservative 16; Mismatches 15; Indels 0; Gaps 0;
 QY 2 VQTVPLSRFLDHAMLAQAHRAHOLAIDTYQEFETYPKDKYSLFHDSTSFSDSIPT 61
 DB 27 VPSVPLSRFLDHAMLAQAHRLHQLAFDYQEFEEAYIPKEKKHSLMENPQASFCFADSIPT 86
 QY 62 PSNMEETQOKSNLELLRISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLLKDLLEG 121
 DB 87 PSNLEETQOKSNLELLRISLLIQSWLEPVQFLSSVFANNLLHHTSDSDVHLLKDLLEG 146
 QY 122 IOTLMGRLEDGSPR 135
 DB 147 IETLMWRLEDGIPR 160

RESULT 6
 QY 007369 PRELIMINARY; PRT; 217 AA.
 AC 007369;
 DT 01-NOV-1996 (TRENBLrel. 01, Created)
 DT 01-NOV-1996 (TRENBLrel. 01, Last sequence update)
 DT 01-DEC-2001 (TRENBLrel. 19, Last annotation update)
 DE SOMATOTROPIN 3 PRECURSOR (GROWTH HORMONE 3).
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheidae;
 OC Cercopitheidae; Macaca.
 OX NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=PLACENTA;
 RX MEDLINE=94008724; PubMed=8404617;
 RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
 RT "Cloning of four growth hormone/chorionic somatomotropin-related
 RT complementary deoxyribonucleic acids differentially expressed during
 RT pregnancy in the rhesus monkey placenta.";
 RL Endocrinology 133:1744-1752(1993).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.
 CC -1- SUBCELLULAR LOCATION: SECRETED.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
 CC EMBL; L16554; AAA18841.1; -;
 DR HSSP; P01241; IAXI.
 DR InterPro; IPR001400; SOMATOTROPIN.
 DR Pfam; PF00103; hormone; 1.
 DR PRINTS; PR00836; SOMATOTROPIN.
 DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
 KW Pituitary; Hormone; Signal.
 FT SIGNAL 1 ?
 FT CHAIN ? 217 SOMATOTROPIN 3.
 FT DISULFID 79 191 BY SIMILARITY.
 FT DISULFID 208 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24874 MW; F1EB6AFDBBA1B185 CRC64;

Query Match 75.4%; Score 523; DB 6; Length 217;
 Best Local Similarity 76.1%; Pred. No. 1.1e-43;
 Matches 102; Conservative 16; Mismatches 16; Indels 0; Gaps 0;
 QY 2 VQTVPLSRFLDHAMLAQAHRAHOLAIDTYQEFETYPKDKYSLFHDSTSFSDSIPT 61
 DB 27 VPSVPLSRFLDHAMLAQAHRLHQLAFDYQEFETYPKDKYSLFHDSTSFSDSIPT 86
 QY 62 PSNMEETQOKSNLELLRISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLLKDLLEG 121
 DB 87 PSNLEETQOKSNLELLRISLLIQSWLEPVQFLSSVFANNLVYDTSDDYHLLKDLLEG 146
 QY 122 IOTLMGRLEDGSPR 135
 DB 147 IOTLMWRLEDGIPR 160

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RESULT 7
Q14406 Q14406 PRELIMINARY; PRT; 199 AA.
AC Q14406;
DT 01-NOV-1996 (Tremblrel. 01, Created)
DT 01-NOV-1996 (Tremblrel. 01, Last sequence update)
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)
DE CHORIONIC SOMATOMAMOTROPIN CS-5.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution."
RL Genomics 4:479-497(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=9110258; PubMed=1980158;
RA Vnencak-Jones C.L., Phillips J.A. III.;
RT "Hot spots for growth hormone gene deletions in homologous regions
RT outside of Alu repeats."
RL Science 250:1745-1748(1990).
DR EMBL; J03071; AAA52550.1; -.
DR HSSP; P01241; I422.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 199 AA; 22649 MW; 119656E87AFD5C3 CRC64;

Query Match 67.6%; Score 469; DB 4; Length 199;
Best Local Similarity 75.8%; Pred. No. 2e-38;
Matches 100; Conservative 2; Mismatches 12; Indels 18; Gaps 1;

QY 2 VOTVPLSLFDHMLQAHRAHQAIDTYQEFETYPKQDKYSFLHDSQTSFSFSDSIPT 61
DB 27 VOTVPLSLFKEAMQAHRAHQAIDTYQEFETSSW-----GMDSIPT 68
QY 62 PSNMEETQCKSNLELLRLISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLKDLLEG 121
DB 69 SSNMEETQCKSNLELLRLISLLIESRLPVRFLRSTFTNNLVYDTSDDYHLKDLLEG 128
QY 122 IOTLMGRLEDS 133
DB 129 IQMLMGRLEDS 140

RESULT 8
Q14644 Q14644 PRELIMINARY; PRT; 245 AA.
AC Q14644;
DT 01-JAN-1998 (Tremblrel. 05, Created)
DT 01-JAN-1998 (Tremblrel. 05, Last sequence update)
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)
DE PLACENTAL GROWTH HORMONE ISOFORM HGH-V3 PRECURSOR.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=FULL-TERM PLACENTA;
RX MEDLINE=98373737; PubMed=9709963;
RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RA Carlsson L.M.S., Carlsson B.;
RT "Cloning of two novel growth hormone transcripts expressed in human
RT placenta."
RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
DR EMBL; AF006060; AAB71828.1; -.
DR HSSP; P01241; I422.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Signal.
FT SIGNAL. 1 26 POTENTIAL.
SQ SEQUENCE 202 AA; 23128 MW; 38B64D011A9197C6 CRC64;

Query Match 62.0%; Score 430.5; DB 4; Length 202;
Best Local Similarity 68.2%; Pred. No. 1.2e-34;
Matches 90; Conservative 12; Mismatches 15; Indels 15; Gaps 1;

QY 4 TVPLSLFDHMLQAHRAHQAIDTYQEFETYPKQDKYSFLHDSQTSFSFSDSIPT 63
DB 29 TIPLSLFDNMLRRLRYQLAYDYQEFEEAYILKEQKYSFLONPQTSCLCFSESIPT 73
QY 64 NMEETQCKSNLELLRLISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLKDLLEG 123

"Cloning of two novel growth hormone transcripts expressed in human
placenta."
J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
EMBL; AF006061; AAB71829.1; -.
HSSP; P01241; I422.
InterPro; IPR001400; SOMATOTROPIN.
Pfam; PF00103; hormone; 1.
PROSITE; PS00266; SOMATOTROPIN_1; 1.
KW Signal.
FT SIGNAL. 1 26 POTENTIAL.
SQ SEQUENCE 245 AA; 27101 MW; 14CC7F8CD75D91C8 CRC64;

Query Match 67.1%; Score 466; DB 4; Length 245;
Best Local Similarity 75.0%; Pred. No. 5e-38;
Matches 93; Conservative 14; Mismatches 17; Indels 0; Gaps 0;

QY 4 TVPLSLFDHMLQAHRAHQAIDTYQEFETYPKQDKYSFLHDSQTSFSFSDSIPT 63
DB 29 TIPLSLFDNMLRRLRYQLAYDYQEFEEAYILKEQKYSFLONPQTSCLCFSESIPT 88
QY 64 NMEETQCKSNLELLRLISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLKDLLEG 123
DB 89 NRVKQCKSNLELLRLISLLIESWLEPVQLLRSLVFANSLVYGASDSNVYRLKDLLEG 148
QY 124 TLMG 127
DB 149 TLIG 152

RESULT 9
Q14643 Q14643 PRELIMINARY; PRT; 202 AA.
AC Q14643;
DT 01-JAN-1998 (Tremblrel. 05, Created)
DT 01-JAN-1998 (Tremblrel. 05, Last sequence update)
DT 01-DEC-2001 (Tremblrel. 19, Last annotation update)
DE PLACENTAL GROWTH HORMONE 20KDA ISOFORM PRECURSOR.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=FULL-TERM PLACENTA;
RX MEDLINE=98373737; PubMed=9709963;
RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RA Carlsson L.M.S., Carlsson B.;
RT "Cloning of two novel growth hormone transcripts expressed in human
RT placenta."
RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
DR EMBL; AF006060; AAB71828.1; -.
DR HSSP; P01241; I422.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW Signal.
FT SIGNAL. 1 26 POTENTIAL.
SQ SEQUENCE 202 AA; 23128 MW; 38B64D011A9197C6 CRC64;

Query Match 62.0%; Score 430.5; DB 4; Length 202;
Best Local Similarity 68.2%; Pred. No. 1.2e-34;
Matches 90; Conservative 12; Mismatches 15; Indels 15; Gaps 1;

QY 4 TVPLSLFDHMLQAHRAHQAIDTYQEFETYPKQDKYSFLHDSQTSFSFSDSIPT 63
DB 29 TIPLSLFDNMLRRLRYQLAYDYQEFEEAYILKEQKYSFLONPQTSCLCFSESIPT 73
QY 64 NMEETQCKSNLELLRLISLLIESWLEPVRFRLSMFANNLVYDTSDDYHLKDLLEG 123

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Db 74 NRKVTQKSNLELLKISLLILQSWLEPVQLRSVFANSVLVGASDSNVYRHLKDLLEGIQ 133
QY 124 TLMGRLEDGSPR 135
Db 134 TLMWRLEDGSPR 145

RESULT 10
Q9UNL5
ID Q9UNL5 PRELIMINARY; PRT; 171 AA.
AC Q9UNL5;
DT 01-MAY-2000 (TReMBLrel. 13, Created)
DT 01-MAY-2000 (TReMBLrel. 13, Last sequence update)
DT 01-DEC-2001 (TReMBLrel. 19, Last annotation update)
DE GROWTH HORMONE SPLICED VARIANT.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PIUITARY;
RA Song H., Peng Y., Dai M., Huang Q., Mao Y., Zhang Q., Mao M., Fu G.,
RA Luo M., Chen J., Hu R.;
RT "Human growth hormone variant splicing gene.";
RL Submitted (DEC-1998) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF110644; AAD48584.1; -.
DR HSSP; P01241; IAXI.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 171 AA; 19801 MW; 9FA9013991FA9F28 CRC64;

Query Match 58.3%; Score 404.5; DB 4; Length 171;
Best Local Similarity 69.38; Pred. No. 3.6e-32;
Matches 79; Conservative 15; Mismatches 17; Indels 3; Gaps 1;

QY 4 TVPLSRFLDHAMLAQRAHQAIDTYQFEETYPKDKYSFLHDSQTSFSFSDSIPTPS 63
Db 29 TIPLSRFLDHAMLAQRAHQAIDTYQFEETYPKDKYSFLHDSQTSFSFSDSIPTPS 88
QY 64 NMEETQOKSNLELLRISLLIESWLEPVFLRSFMANNVYDTSDDYHLKDLLEGIQ 117
Db 89 NREETQOKSNLELLRISLLILQSWLEPVQIFKQYISK---FDTNSHDDALLKN 139

RESULT 11
Q9JMK4
ID Q9JMK4 PRELIMINARY; PRT; 216 AA.
AC Q9JMK4;
DT 01-OCT-2000 (TReMBLrel. 15, Created)
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TReMBLrel. 19, Last annotation update)
DE GROWTH HORMONE PRECURSOR.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE FROM N.A.
RA Odorico D.M., Fuller P.J., Herington A.C.;
RT "Cloning and sequence of guinea pig growth hormone (GH).";
RL Submitted (FEB-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF233853; AAF36409.1; -.
DR HSSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.

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DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Signal.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 216 GROWTH HORMONE.
SQ SEQUENCE 216 AA; 24822 MW; 45996BELL19B08DD3 CRC64;

Query Match 57.3%; Score 398; DB 11; Length 216;
Best Local Similarity 60.3%; Pred. No. 2.1e-31;
Matches 79; Conservative 24; Mismatches 26; Indels 2; Gaps 2;

QY 5 VPLSRFLDHAMLAQRAHQAIDTYQFEETYPKDKYSFLHDSQTSFSFSDSIPTPSN 64
Db 30 MPLSSFLGNAVLAQRAHQAIDTYQFEETYPKDKYSFLHDSQTSFSFSDSIPTPD 88
QY 65 MEETQOKSNLELLRISLLIESWLEPVFLRSFMANNVYDTSDDYHLKDLLEGIQ 124
Db 89 KEAQQRSDVELLHFLSLLILQSWLGPVQLSRVFTNSLVFGTSDR-VYEKLKDLLEGIQA 147
QY 125 LMGRLEDGSPR 135
Db 148 LMRELEDGTPR 158

RESULT 12
Q9JKG0
ID Q9JKG0 PRELIMINARY; PRT; 190 AA.
AC Q9JKG0;
DT 01-OCT-2000 (TReMBLrel. 15, Created)
DT 01-OCT-2000 (TReMBLrel. 15, Last sequence update)
DT 01-DEC-2001 (TReMBLrel. 19, Last annotation update)
DE GROWTH HORMONE (FRAGMENT).
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20231762; PubMed=10767558;
RA Adkins R.M., Vandenberg J., Li W.H.;
RT "Molecular evolution of growth hormone and receptor in the guinea-pig,
RT a mammal unresponsive to growth hormone.";
RL Gene 246:357-363(2000).
DR EMBL; AF238493; AAF67172.1; -.
DR HSSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; UNKNOWN_1.
FT NON_TER 1
SQ SEQUENCE 190 AA; 21962 MW; 6A0394FC5E707BE8 CRC64;

Query Match 55.9%; Score 388; DB 11; Length 190;
Best Local Similarity 58.8%; Pred. No. 1.7e-30;
Matches 77; Conservative 24; Mismatches 28; Indels 2; Gaps 2;

QY 5 VPLSRFLDHAMLAQRAHQAIDTYQFEETYPKDKYSFLHDSQTSFSFSDSIPTPSN 64
Db 4 MPXSSXFGNAVLAQRAHQAIDTYQFEETYPKDKYSFLHDSQTSFSFSDSIPTPD 62
QY 65 MEETQOKSNLELLRISLLIESWLEPVFLRSFMANNVYDTSDDYHLKDLLEGIQ 124
Db 63 KEAQQRSDVELLHFLSLLILQSWLGPVQLSRVFTNSLVFGTSDR-VYEKLKDLLEGIQA 121
QY 125 LMGRLEDGSPR 135
Db 122 LMRELEDGTPR 132

RESULT 13
Q9HBZ1

```

```

ID Q9HBZ1 PRELIMINARY; PRT; 179 AA.
AC Q9HBZ1;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE GROWTH HORMONE VARIANT.
GN GHV.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OC NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PIUITARY;
RA Gu J., Huang Q., Li N., Xu S., Han Z., Fu G., Chen Z.;
RT "A novel gene expressed in human pituitary.";
RL Submitted (SEP-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF185611; AAG09699.1; -.
DR HSP; P01241; IAXI.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 179 AA; 20561 MW; 0E875A91BE0B9B7E CRC64;

Query Match 54.9%; Score 381; DB 4; Length 179;
Best Local Similarity 60.6%; Pred. No. 7.7e-30;
Matches 80; Conservative 6; Mismatches 8; Indels 38; Gaps 1;

Qy 4 TVPLSRFDHMLQAHRAHQLAIDTYOEFEETYPKDKYSLFHDSTQSFSDSIPTPS 63
Db 29 TIPLSRFDHMLQAHRAHQLAIDTYOEFEETYPKDKYSLFHDSTQSFSDSIPTPS 88
Qy 64 NMEETQOKSNLELRISLLIESWLEPVFLRSMFANNLVYDTSDDYHLLKDLLEGIQ 123
Db 89 NREETQOKSNLELRISLLIESWLEPVFLRSMFANNLVYDTSDDYHLLKDLLEGIQ 110
Qy 124 TLMGRLEDGSPR 135
Db 111 TLMGRLEDGSPR 122

RESULT 14
Q28957 Q28957 PRELIMINARY; PRT; 217 AA.
AC Q28957;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE GROWTH HORMONE.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OC NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PIUITARY;
RA Qi S.-z., Wang X.-z., Zhou S.-w., Jia F., Wang H.-y., Xia, Li, Li J.;
RT "cDNA sequence of the porcine growth hormone.";
RL Chin. J. Biotechnol. 5:35-39(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=PIUITARY;
RA Xu L.;
RL Submitted (JAN-1995) to the EMBL/GenBank/DBJ databases.
DR EMBL; U19787; AAA73477.1; -.
DR HSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
SQ SEQUENCE 217 AA; 24470 MW; F708195D8A678831 CRC64;

```

```

Query Match 54.6%; Score 379; DB 6; Length 217;
Best Local Similarity 58.0%; Pred. No. 1.5e-29;
Matches 76; Conservative 24; Mismatches 29; Indels 2; Gaps 2;

Qy 5 VPLSRFDHMLQAHRAHQLAIDTYOEFEETYPKDKYSLFHDSTQSFSDSIPTPSN 64
Db 31 MPLSLFANAVLAHQHLQAAADTYKEFDPRYIPGQRYIS-IQNAQAACFCSETIPATG 89
Qy 65 MEETQOKSNLELRISLLIESWLEPVFLRSMFANNLVYDTSDDYHLLKDLLEGIQ 124
Db 90 KDEAQQRSDVELLRFSLLLIQSLGVPQFLSRVFNLSLVFGTSDR-VYEKLKDLLEGIOA 148
Qy 125 LMGRLEDGSPR 135
Db 149 LMRELEDGSPR 159

```

```

RESULT 15
Q9R2C3 Q9R2C3 PRELIMINARY; PRT; 216 AA.
AC Q9R2C3;
DT 01-MAY-2000 (TrEMBLrel. 13, Created)
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE GROWTH HORMONE.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OC NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RA Nguyen T.N.K., Liehaber S.A.;
RT "Mouse Growth Hormone Locus: Nucleotide Sequence and Phylogenetic Analyses.";
RL Submitted (AUG-1995) to the EMBL/GenBank/DBJ databases.
DR EMBL; U34362; AACG9988.1; -.
DR HSP; P01246; 1BST.
DR InterPro; IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 216 AA; 24682 MW; FC2A06DA02536B18 CRC64;

```

```

Query Match 54.3%; Score 377; DB 11; Length 216;
Best Local Similarity 57.3%; Pred. No. 2.4e-29;
Matches 75; Conservative 24; Mismatches 30; Indels 2; Gaps 2;

Qy 5 VPLSRFDHMLQAHRAHQLAIDTYOEFEETYPKDKYSLFHDSTQSFSDSIPTPSN 64
Db 30 MPLSLFANAVLAHQHLQAAADTYKEFDPRYIPGQRYIS-IQNAQAACFCSETIPATG 88
Qy 65 MEETQOKSNLELRISLLIESWLEPVFLRSMFANNLVYDTSDDYHLLKDLLEGIQ 124
Db 89 KEAQQRSDVELLRFSLLLIQSLGVPQFLSRVFNLSLVFGTSDR-VYEKLKDLLEGIOA 147
Qy 125 LMGRLEDGSPR 135
Db 148 LMQELEDGSPR 158

```

Search completed: September 25, 2002, 10:03:39
Job time: 222 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:53:31 ; Search time 51.49 Seconds
(without alignments)
289.064 Million cell updates/sec

Title: US-09-819-094-24

Perfect score: 680
1 MFPTPLSRLEFDNAMLRAHR.....LKDEEGIQTLMGRIEDGSP 134

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%

Listing first 45 summaries

Database :

_A_Geneseq_032802.*
1: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1980.DAT.*
2: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1981.DAT.*
3: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1982.DAT.*
4: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1983.DAT.*
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8: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1987.DAT.*
9: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1988.DAT.*
10: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1989.DAT.*
11: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1990.DAT.*
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16: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1995.DAT.*
17: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1996.DAT.*
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19: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1998.DAT.*
20: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA1999.DAT.*
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22: /SIDSL/gcgdata/hold-geneseq/geneeqp-emb1/AA2001.DAT.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	680	100.0	134	20	AAW92265	Human anti-angioge
2	675	99.3	140	10	AAW92265	Human anti-angioge
3	675	99.3	140	10	AAW92265	Human anti-angioge
4	675	99.3	140	10	AAW92265	Human anti-angioge
5	675	99.3	140	10	AAW92265	Human anti-angioge
6	675	99.3	140	10	AAW92265	Human anti-angioge
7	675	99.3	140	10	AAW92265	Human anti-angioge
8	675	99.3	140	10	AAW92265	Human anti-angioge
9	675	99.3	140	10	AAW92265	Human anti-angioge
10	675	99.3	140	10	AAW92265	Human anti-angioge
11	675	99.3	140	10	AAW92265	Human anti-angioge

12	670	98.5	191	20	AAW92265	Human anti-angioge
13	670	98.5	191	20	AAW92265	Human anti-angioge
14	670	98.5	191	20	AAW92265	Human anti-angioge
15	670	98.5	191	20	AAW92265	Human anti-angioge
16	670	98.5	191	20	AAW92265	Human anti-angioge
17	670	98.5	191	20	AAW92265	Human anti-angioge
18	670	98.5	191	20	AAW92265	Human anti-angioge
19	670	98.5	191	20	AAW92265	Human anti-angioge
20	670	98.5	191	20	AAW92265	Human anti-angioge
21	670	98.5	191	20	AAW92265	Human anti-angioge
22	670	98.5	191	20	AAW92265	Human anti-angioge
23	670	98.5	191	20	AAW92265	Human anti-angioge
24	670	98.5	191	20	AAW92265	Human anti-angioge
25	670	98.5	191	20	AAW92265	Human anti-angioge
26	670	98.5	191	20	AAW92265	Human anti-angioge
27	670	98.5	191	20	AAW92265	Human anti-angioge
28	670	98.5	191	20	AAW92265	Human anti-angioge
29	670	98.5	191	20	AAW92265	Human anti-angioge
30	670	98.5	191	20	AAW92265	Human anti-angioge
31	670	98.5	191	20	AAW92265	Human anti-angioge
32	670	98.5	191	20	AAW92265	Human anti-angioge
33	670	98.5	191	20	AAW92265	Human anti-angioge
34	670	98.5	191	20	AAW92265	Human anti-angioge
35	670	98.5	191	20	AAW92265	Human anti-angioge
36	670	98.5	191	20	AAW92265	Human anti-angioge
37	670	98.5	191	20	AAW92265	Human anti-angioge
38	670	98.5	191	20	AAW92265	Human anti-angioge
39	670	98.5	191	20	AAW92265	Human anti-angioge
40	670	98.5	191	20	AAW92265	Human anti-angioge
41	670	98.5	191	20	AAW92265	Human anti-angioge
42	670	98.5	191	20	AAW92265	Human anti-angioge
43	670	98.5	191	20	AAW92265	Human anti-angioge
44	670	98.5	191	20	AAW92265	Human anti-angioge
45	670	98.5	191	20	AAW92265	Human anti-angioge

ALIGNMENTS

RESULT	1	
AAW92265	standard; Protein; 134 AA.	
ID	AAW92265	
XX	AAW92265	
AC	AAW92265	
DT	08-JUN-1999 (first entry)	
XX	08-JUN-1999 (first entry)	
DE	Human anti-angiogenic peptide 16k hgh Met-1Pro133.	
XX	Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;	
KW	growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;	
KW	placental vasculatization; pregnancy; treatment; angiogenic disease;	
KW	tumour; inhibitor; malignant; angiodioma; arteriovenous malformation;	
KW	arthritis; atherosclerotic plaques; corneal graft neovascularization;	
KW	wound healing; proliferative retinopathy; macular degeneration; trachoma;	
KW	granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;	
KW	psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular	
KW	ulcer; leukaemia; reproductive disorder; contraceptive agent;	
KW	gene therapy; pre-eclampsia; intrauterine growth retardation;	
KW	placental dysfunction.	
OS	Homo sapiens.	
XX	XX	
PN	WO9851323-A1.	
XX	19-NOV-1998.	
PD	12-MAY-1998; 98MO-US09691.	
XX	13-MAY-1997; 97US-0046394.	
XX	(REGC) UNIV CALIFORNIA.	
XX	XX	

Mutant human 22kDa
Human growth hormo
Met-ASP-human grow
Recombinant human
Sequence of AP sig
Sequence of Escher
Sequence of Escher
Human growth hormo
Synthetic human gr
Human growth hormo
Human growth hormo
Human growth hormo
Human growth hormo
Human growth hormo
Secretory cell lin
Fusion of killer t
Plasmid POW885 hum
MWsp-MWmp20-(His
Human growth hormo
Human growth hormo
Plasmid POW360 enc
Human growth hormo
Fusion protein of
Human growth hormo
Human growth hormo
Human somatotropin
Human growth hormo
Sequence of pre an
Human growth hormo
Npro-hgh fusion pr
Rat retino bindin
Mature human growt
Mature human growt
hgh variant #1 - 1

PI Martial JA, Struman I, Taylor R, Weiner RI:
XX
XX WPI: 1999-045192/04.
DR N-PSDB; AAX01707.
XX
XX New anti-angiogenic peptides - comprise N-terminal fragments of
PT human placental lactogen, human growth hormone, growth hormone
PT variant or human prolactin
XX
PS Claim 4; Page 49-50; 87pp; English.
XX
XX This invention describes novel human anti-angiogenic peptides derived
CC from 10 to 150 consecutive amino acids selected from the N-terminal end
CC of human placental lactogen (hPL), human growth hormone (hGH), growth
CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC capillary endothelial cell proliferation and organisation (ii) inhibit
CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC least one specific receptor which does not bind an intact full length
CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC diagnosing a probable abnormality of placental vasculatisation during
CC pregnancy. The peptides can be used for treating an angiogenic disease in
CC a subject, for inhibiting tumour formation or growth in a patient or for
CC modulating vasculatisation of a patient's placenta. In particular, the
CC peptides can be used for preventing or treating e.g. malignant tumours,
CC angliobroma, arteriovenous malformation, arthritic such as rheumatoid
CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
CC delayed wound healing, proliferative retinopathy such as diabetic
CC retinopathy, macular degeneration, granulations such as those occurring
CC in haemophilic joints, inappropriate vasculatisation in wound healing
CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC leukaemia, and reproductive disorders such as follicular and luteal cysts
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
CC encoding the peptides can be used in gene therapy. The measurement of
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC can be used in assays for impairment of vascular development associated
CC with pre-eclampsia, intrauterine growth retardation, and placental
CC dysfunction.
XX
XX Sequence 134 AA:
SQ
Query Match 100.0%; Score 680; DB 20; Length 134;
Best Local Similarity 100.0%; Pred. No. 3.8e-59;
Matches 134; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MFPITPLSRFLDNAMLRHRLHQLAFDTYQEFEEAYIPKQKXSFQNPQTSISFSESP 60
DB 1 mfpitplsrflidnamlrhrlhqlafdtqyqfeeyipkqkysflqnpqtsisfsesp 60
QY 61 TPSNREETOQKSNLELRISLLIQSNLEPYQFLRSVFANSIYGSADSNVYDLKDLDE 120
DB 61 tpsnreetoqksnlelrislliqsnlepyqflrsvfanslygsadsnvylldkdee 120
QY 121 GIQTLMGRLDEGSP 134
DB 121 gqtlmgrldegsp 134

RESULT 2
AAP91041
ID AAP91041 standard; protein: 140 AA.
XX
XX AAP91041:
AC
XX 14-DEC-1989 (first entry).
DT
XX
DE Human growth hormone segment.
XX
XX Human growth hormone; fusion protein; thrombin;
KW geriatric dementia; nervous disorders; human nerve factor.

XX
OS Homo sapiens (human).
XX
XX EP229175-A.
PN
XX 23-AUG-1989.
PD
XX 17-FEB-1989; 89EP-0102795.
PF
XX 19-FEB-1988; 88JP-0035042.
PR
XX (TOYJ) TOSOH CORP.
PA
XX Ohtsuka E;
PI
XX WPI: 1989-243092/34.
DR
XX
XX New human nerve growth factor gene encoding fusion protein
PT - having cleavage site for thrombin, useful for treating geriatric
PT dementia, etc.
XX
PS Disclosure; page 21; 38pp; English.
XX
XX Human growth hormone segment, used at the N-terminal of a fusion
CC protein, which contains a thrombin recognition site, and human beta nerve
CC growth factor (beta-NGF) at the C-terminal. Beta-NGF can be used to
CC control geriatric dementia and other nervous disorders, and can be
CC released from the fusion protein by incubation with thrombin (see
CC AA90577-B, AAP91034, AAP91299).
XX
XX Sequence 140 AA:
SQ
Query Match 99.3%; Score 675; DB 10; Length 140;
Best Local Similarity 99.3%; Pred. No. 1.2e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPITPLSRFLDNAMLRHRLHQLAFDTYQEFEEAYIPKQKXSFQNPQTSISFSESP 60
DB 1 mfpitplsrflidnamlrhrlhqlafdtqyqfeeyipkqkysflqnpqtsisfsesp 60
QY 61 TPSNREETOQKSNLELRISLLIQSNLEPYQFLRSVFANSIYGSADSNVYDLKDLDE 120
DB 61 tpsnreetoqksnlelrislliqsnlepyqflrsvfanslygsadsnvylldkdee 120
QY 121 GIQTLMGRLDEGSP 134
DB 121 gqtlmgrldegsp 134

RESULT 3
AAP90129
ID AAP90129 standard; protein: 192 AA.
XX
XX AAP90129:
AC
XX 06-FEB-1996 (revised)
DT 01-NOV-1989 (first entry)
DT
XX
DE Human growth hormone.
XX
XX Human growth hormone; fusion protein; recombinant
KW vector.
XX
XX Homo sapiens (Human).
OS
XX JP01144981-A.
PN
XX 07-JUN-1989.
PD
XX
PF 02-DEC-1987; 87JP-0304937.
PR 02-DEC-1987; 87JP-0304937.

XX (MAKU) MAKUNGA SEITYAKU KK.
XX WPI; 1989-209284/29.
DR N-PSDB; AAN90269.
XX
XX Recombinant vector contg. fusion protein - consisting of human
PT growth hormone or deriv. ligated to foreign protein, for stability
PT and high yield.
XX
XX
XX Disclosure; Fig 1; 19pp; Japanese.
XX
XX The invention consists of a vector contg. a fusion protein which is
CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
CC formed by substn. of Met-14 with leu) and a foreign protein.
CC Stability of the vector in the host is greatly increased so the
CC protein yield is higher.
XX
XX Sequence 192 AA;
XQ

```

OS Homo sapiens (human).
FH Key
FT Region 1..140
FT Region 141..143
FT Region 144..261
XX
XX EP329175-A.
XX
XX 23-AUG-1989.
XX
XX 17-FEB-1989; 89EP-0102795.
XX
XX 19-FEB-1988; 88JP-0035042.
XX
XX (TOXJ ) TOSOH CORP.
XX
XX Ohtsuka E.
XX
XX WPI; 1989-243092/34.
XX
XX New human nerve growth factor gene encoding fusion protein
XX - having cleavage site for thrombin, useful for treating geriatric
XX dementia, etc.
XX
XX Claim 36; page 31-32; 38pp; English.
XX
XX Fusion protein consisting of human growth hormone at the
XX N-terminal end (1st region), a 3 amino acid sequence representing
XX thrombin recognition site, and human beta nerve growth factor (beta-NGF)
XX at the C-terminal. Beta-NGF can be used to control geriatric dementia
XX and other nervous disorders, and can be released from the fusion
XX protein by incubation with thrombin (see AAN90577-8, AAP91034,
XX AAP91041).
XX
XX Sequence 261 AA:
SQ

```

Query Match 99.3%; Score 675; DB 10; Length 261;
Best Local Similarity 99.3%; Pred. No. 2,7e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```

OY 1 MFPTPLSLRFPNAMLRAHRLHQLAFDPTQYQFEFEAYTPKEQKYSFLQNPOTSLSFSSEIP 60
XX |
XX |
XX |
DB 1 MFPTPLSLRFPNAMLRAHRLHQLAFDPTQYQFEFEAYTPKEQKYSFLQNPOTSLSFSSEIP 60
XX |
XX |
XX |
OY 61 TPSNREETQOKSNLELRISLLLIQSWLEPVQFLRSVPANSVLYGASDSNVYDLKDLLE 120
XX |
XX |
XX |
DB 61 TPSNREETQOKSNLELRISLLLIQSWLEPVQFLRSVPANSVLYGASDSNVYDLKDLLE 120
XX |
XX |
XX |
OY 121 GIOTLMGRLEOGSP 134
XX |
XX |
XX |
DB 121 GIOTLMGRLEOGSP 134
XX |
XX |
XX |

```

RESULT 6
AAR11740
ID AAR11740 standard; Protein: 262 AA.
XX
XX AAR11740;
XX
XX 25-JUN-1991 (first entry)
XX
XX Human growth hormone/human nerve growth factor beta fusion protein.
XX
XX hGH; hNGF; nervous system diseases; dementia.
XX
XX Homo sapiens.
XX
XX JP03067598-A.
XX
XX 22-MAR-1991.
XX
XX

```

PF 07-JUL-1989; 89JP-0202835.
XX
XX 07-AUG-1989; 89JP-0202835.
XX
XX (TOXJ ) TOSOH CORP.
XX
XX WPI; 1991-128768/18.
XX
XX N-PSDB; AAQ11578.
XX
XX Purificn. of human neuron growth factor beta-subunit-contg. protein -
XX by contacting with gel having cation exchange gp. in presence of
XX urea
XX
XX Disclosure ; fig 1; 7pp; Japanese.
XX
XX A recombinant human nerve growth factor beta subunit-contg. protein
XX can be produced as this fusion protein. It is purified by contacting
XX a gel having a cation exchange gp. with the fusion protein, in the
XX presence of urea. The purified protein is useful in a medicament
XX for treating disorders of the nervous system, eg dementia.
XX
XX Sequence 262 AA:
SQ

```

Query Match 99.3%; Score 675; DB 12; Length 262;
Best Local Similarity 99.3%; Pred. No. 2,7e-58;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

```

OY 1 MFPTPLSLRFPNAMLRAHRLHQLAFDPTQYQFEFEAYTPKEQKYSFLQNPOTSLSFSSEIP 60
XX |
XX |
XX |
DB 1 MFPTPLSLRFPNAMLRAHRLHQLAFDPTQYQFEFEAYTPKEQKYSFLQNPOTSLSFSSEIP 60
XX |
XX |
XX |
OY 61 TPSNREETQOKSNLELRISLLLIQSWLEPVQFLRSVPANSVLYGASDSNVYDLKDLLE 120
XX |
XX |
XX |
DB 61 TPSNREETQOKSNLELRISLLLIQSWLEPVQFLRSVPANSVLYGASDSNVYDLKDLLE 120
XX |
XX |
XX |
OY 121 GIOTLMGRLEOGSP 134
XX |
XX |
XX |
DB 121 GIOTLMGRLEOGSP 134
XX |
XX |
XX |

```

RESULT 7
AAR05313
ID AAR05313 standard; protein: 144 AA.
XX
XX AAR05313;
XX
XX 19-JUL-1990 (first entry)
XX
XX Segment of B-cell stimulatory factor-2 (IL-5).
XX
XX B-cell stimulatory factor-2; interleukin-5.
XX
XX Homo sapiens.
XX
XX JP02013375-A.
XX
XX 17-JAN-1990.
XX
XX 01-JUL-1988; 88JP-0162556.
XX
XX 01-JUL-1988; 88JP-0162556.
XX
XX (TOXJ) TOSOH CORP.
XX
XX WPI; 1990-062207/09.
XX
XX N-PSDB; AAQ02028.
XX
XX Prepn. of human B-cell differentiation factor - from specified DNA
XX sequence segment, by recombinant DNA technique, gives protein of
XX specified amino acid sequence.
XX
XX Disclosure; Page 9; 17pp; Japanese.
XX
XX

XX The sequence encoding this protein can be fused with DNA encoding B-cell
 CC differentiation factor (IL-6) and ligated into an expression vector for
 CC prodn. of a fusion protein.
 CC See also AAR05311.
 XX
 SQ Sequence 144 AA;

Query Match 98.8%; Score 672; DB 11; Length 144;
 Best Local Similarity 98.5%; Pred. No. 2.5e-58;
 Matches 132; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAPDTYOEFEEAYIPKEOKYSFLONPOTSLSFSESIP 60
 |||||||
 Db 1 mfpitplsrlfdnamlrahrhqlafdtlyqefeeayipkeqkysflpnqtslcfesesip 60
 QY 61 TPSNREETOOKSNLELRISILLIQSWLEPVOFLRSVFANSIYVYGASDSNVYDLKDL 120
 |||||||
 Db 61 tpsnreecqgksnlellrlisilliqswlepvyqlrsvfanslyvgasdsnvylldklee 120
 QY 121 GIOTLMGRLEDGSP 134
 |||||||
 Db 121 giotlmgrledgsp 134

RESULT 8

AAP61033
 ID AAP61033 standard; Protein; 262 AA.

AC AAP61033;

DT 25-OCT-1991 (first entry)

DE Human beta-nerve growth factor gene product.

KW Beta-NGF; E.coli; ds.

OS Homo sapiens.

XX Key Location/Qualifiers

FT Protein 145..262

PN JP61205485-A.

PD 11-SEP-1986.

PF 09-MAR-1985; 85JP-0045773.

PR 09-MAR-1985; 85JP-0045773.

PA (OTSU/) OTSUKA E.

DR WPI; 1986-281696/43.

PT Gene segment of human nerve growth factor - used in prodn. of
 NGF-producing recombinant Escherichia strain.

PS Claim 32; Page 482; 71pp; Japanese.

XX The protein is a direct translation of the upstream tryptophan
 CC promoter-operator lacking its attenuation sequence and human
 CC beta-NGF sequence. The product may be efficiently expressed from a
 CC transformed E.coli expression system.
 CC See also AAN0816-7.

XX Sequence 262 AA;

Query Match 98.8%; Score 672; DB 7; Length 262;
 Best Local Similarity 98.5%; Pred. No. 5.3e-58;
 Matches 132; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNMLRAHRLHQLAPDTYOEFEEAYIPKEOKYSFLONPOTSLSFSESIP 60
 |||||||
 Db 1 mfpitplsrlfdnamlrahrhqlafdtlyqefeeayipkeqkysflpnqtslcfesesip 60
 QY 61 TPSNREETOOKSNLELRISILLIQSWLEPVOFLRSVFANSIYVYGASDSNVYDLKDL 120
 |||||||
 Db 61 tpsnreecqgksnlellrlisilliqswlepvyqlrsvfanslyvgasdsnvylldklee 120

QY 121 GIOTLMGRLEDGSP 134
 |||||||
 Db 121 giotlmgrledgsp 134

RESULT 9

AAP81226
 ID AAP81226 standard; protein; 138 AA.

AC AAP81226;

DT 20-NOV-1990 (first entry)

DE Sequence of protein with somatomedin-like activity.

KW Growth hormone.

OS Synthetic.

PN JP63167798-A.

PD 11-JUL-1988.

PF 29-DEC-1986; 86JP-0310177.

PR 29-DEC-1986; 86JP-0310177.

PA (TOYO) TOYO SODA MFG KK.

DR WPI; 1988-232632/33.

DR N-PSDB; AAN81605.

XX

PT Polypeptide with somatomedin-like activity -

PT by culturing bacterium transformed by plasmid contg. gene

PT segment with specified DNA sequence

PS Claim 2(1); Page 609; 9pp; Japanese.

XX The polypeptide (AAP81226) with somatomedin-like activity and the DNA
 CC (AAN81605) encoding it are claimed. A Met residual gp. may be added to
 CC the N-terminal. The polypeptide acts on the bone structure of mammals,
 CC including humans, to promote bone growth. The polypeptide has high
 CC production rate and is easily extracted from bacterial culture medium
 CC and refined for use as a bone growth accelerator.

XX Sequence 138 AA;

Query Match 98.5%; Score 670; DB 9; Length 138;
 Best Local Similarity 99.2%; Pred. No. 3.7e-58;
 Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 MFPTIPLSRLFDNMLRAHRLHQLAPDTYOEFEEAYIPKEOKYSFLONPOTSLSFSESIP 61
 |||||||
 Db 1 mfpitplsrlfdnamlrahrhqlafdtlyqefeeayipkeqkysflpnqtslcfesesip 60
 QY 62 PSNREETOOKSNLELRISILLIQSWLEPVOFLRSVFANSIYVYGASDSNVYDLKDL 121
 |||||||
 Db 61 psnreecqgksnlellrlisilliqswlepvyqlrsvfanslyvgasdsnvylldklee 120

QY 122 IOTLMGRLEDGSP 134
 |||||||
 Db 121 iotlmgrledgsp 133

```

RESULT 10
AA15809
ID AAY15809 standard; protein; 191 AA.
XX
AC AAY15809;
XX
DE 28-JUL-1999 (first entry)
XX
DE Primary amino acid sequence of native human growth hormone.
XX
KW Detection; fluoresce; illegal misuse; growth substance; athlete;
KW domesticated farm animal; cattle; human growth hormone.
XX
OS Homo sapiens.
XX
PN WO9926069-A1.
XX
PD 27-MAY-1999.
XX
PF 16-NOV-1998; 98WO-GB03449.
XX
PR 14-NOV-1997; 97GB-0023955.
XX
PA (GENE-) GENERIC BIOLOGICALS LTD.
XX
PI Atkinson A, Murphy JP;
XX
DR WPI: 1999-338072/28.
XX
PT Use of tagged exogenous polypeptide
XX
PS Disclosure; Fig 1; 38pp; English.
XX
CC The specification describes a method of detecting an exogenously
CC administered substance from a naturally-occurring endogenous substance,
CC the exogenous substance being tagged so that it fluoresces differently
CC from the endogenous one at a suitable wavelength. The tagging may
CC consist of one or more substitutions in tagged growth hormone
CC selected from G40Y, F52Y, W86F, Y, L, I or V F103Y or I137Y;
CC The method is used to distinguish between exogenously administered
CC substances as compared to naturally-occurring endogenous substances.
CC Especially mentioned is the illegal misuse of growth substances by
CC athletes or in domesticated farm animals e.g. cattle. The present
CC sequence represents native human growth hormone which may be used
CC in the method of the invention.
XX
SO Sequence 191 AA;

Query Match 98.5%; Score 670; DB 20; Length 191;
Best Local Similarity 99.2%; Pred. No. 5.6e-58;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 FPTPLSLRFDNMALRAHRLHQLAFDPTQDFEFAIYIPKEOKYSFLONPOTSISFSISPT 61
DB 1 fptplslrlfndamrlahrlnhqlafdygfeeaayipkeqkysflqnpqtscisessipt 60
QY 62 PSNREETOOKSNLELRISLLIQSMLEPVQFURSVFANSVLYGASDSNWDLKDLEEG 121
DB 61 psneeetqgksnlellrlisllllqswlepvpqflrsvfanslyvgasdsnvdlkdlleeg 120
QY 122 IOTLMGRLEDCSP 134
DB 121 iqltmgrlecdsp 133

RESULT 11
AAY04396
ID AAY04396 standard; protein; 191 AA.
XX
AC AAY04396;
XX
DE 29-JUN-1999 (first entry)
XX

```

```

XX
DE Natural human 22kDa growth hormone.
XX
KW Human; 22kDa growth hormone; hGH; mutant; thrombin; resistance;
KW plasmin; decomposition.
XX
OS Homo sapiens.
XX
PN JP11092499-A.
XX
PD 06-APR-1999.
XX
PF 22-SEP-1997; 97JP-0275277.
XX
PR 22-SEP-1997; 97JP-0275277.
XX
PA (SUMU ) SUMITOMO SEIYAKU KK.
XX
PD WPI: 1999-283567/24.
XX
PT A human growth hormone mutant - with equivalent activity to natural
PT human growth hormone
XX
PS Example 1; Page 5-6; 10pp; Japanese.
XX
CC The present invention describes a human growth hormone mutant in which
CC the 134th Arg and the 135th Thr are replaced respectively by Asp and Pro
CC in the 1st to the 191st amino acid sequence of natural type human 22 kDa
CC growth hormone (hGH) and which has a resistance against decomposition by
CC thrombin. The present sequence represents the natural hGH. Also
CC described are: (1) a hGH mutant in which the 134th Arg, the 135th Thr
CC and the 140th Lys are replaced respectively by Asp, Pro and Ala in the
CC amino acid sequence of natural type hGH and which has a resistance
CC against decomposition by thrombin and plasmin; and (2) a drug
CC preparation containing the above hGH mutant as the active component.
CC The mutant hGH shows an activity approximately equivalent to that of
CC natural type hGH and shows a high stability in blood and body fluid.
XX
SO Sequence 191 AA;

Query Match 98.5%; Score 670; DB 20; Length 191;
Best Local Similarity 99.2%; Pred. No. 5.6e-58;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 FPTPLSLRFDNMALRAHRLHQLAFDPTQDFEFAIYIPKEOKYSFLONPOTSISFSISPT 61
DB 1 fptplslrlfndamrlahrlnhqlafdygfeeaayipkeqkysflqnpqtscisessipt 60
QY 62 PSNREETOOKSNLELRISLLIQSMLEPVQFURSVFANSVLYGASDSNWDLKDLEEG 121
DB 61 psneeetqgksnlellrlisllllqswlepvpqflrsvfanslyvgasdsnvdlkdlleeg 120
QY 122 IOTLMGRLEDCSP 134
DB 121 iqltmgrlecdsp 133

RESULT 12
AAY04397
ID AAY04397 standard; protein; 191 AA.
XX
AC AAY04397;
XX
DE 29-JUN-1999 (first entry)
XX
DE Mutant human 22kDa growth hormone.
XX
KW Human; 22kDa growth hormone; hGH; mutant; thrombin; resistance;
KW plasmin; decomposition.
XX
OS Homo sapiens.
OS Synthetic.

```


XX 20-AUG-1986; 86EP-0306452.
 XX
 XX 26-AUG-1985; 85US-0769221.
 XX
 XX (ELIL) ELI LILLY AND CO.
 XX
 XX Jaskunas SR JR;
 XX
 XX WPI: 1987-243638/35.
 DR N-PSDB: AAN70393.
 XX
 XX Hybrid transcriptional and translational activating sequence - derive
 PT from the bacteriophage lambda pL promoter and E.coli lpp activating
 PS sequence.
 XX
 XX Disclosure; page 47-8; 68pp; English.
 CC
 CC The human growth hormone (hGH) with N-terminal Met-Asp may be
 CC expressed using the lambda pL-lpp hybrid transcriptional and
 CC translational activating sequence. See also AAN70161.
 CC
 XX
 SQ Sequence 193 AA;

Query Match 98.5%; Score 670; DB 8; Length 193;
 Best Local Similarity 99.2%; Pred. No. 5.7e-58;
 Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 2 FFTPLSLRFLPNAMLRARHLHQLAFDYYOEFEAYIRKQKYSPLQNPQTSLSFSSESIPR 61
 DB 3 fptlplslrlfdnamlrarhlhqlafdyqefeeayirkeqkysfllqnpqtslcsesipt 62
 OY 62 PSNREETOQKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNYYDLKDLDEG 121
 DB 63 psnreetqkksnlellrlsllllqswlepvgflrsvfanslvygadsnvydlkdldeg 122
 OY 122 IOTLMGRLEDGSP 134
 DB 123 iqlimgriedgsp 135

RESULT 15
 AAY30530
 ID AAY30530 standard; protein; 194 AA.
 XX
 AC AAY30530;
 XX
 DT 15-NOV-1999 (first entry)
 XX
 DE Recombinant human somatotropin protein.
 XX
 KW Somatotropin protein; protein stabilization; aggregation; stability;
 KW animal growth rate; feed utilization; carcass quality; milk production;
 KW wool production.
 XX
 OS Homo sapiens.
 XX
 OS US9591972-A.
 XX
 PD 14-SEP-1999.
 XX
 PD 06-FEB-1995; 95US-0383621.
 XX
 PR 25-SEP-1991; 91US-0766142.
 PR 04-MAY-1990; 90US-0519047.
 PR 06-FEB-1995; 95US-0383621.
 XX
 PA (AMCY) AMERICAN CYANAMID CO.
 XX
 PI Bohlen P, Buckwalter BL, Cady SM, Daley MJ, Seddon AP;
 PI Shieh H;
 XX

DR WPI: 1999-550481/46.
 XX
 XX Derivatized proteins and polypeptides, useful for improving
 PT properties of e.g. a somatotropin, interleukin, interferon, growth
 PT factor, proteinase or antithrombin III
 XX
 XX Disclosure: Column 5; 19pp; English.
 XX
 XX
 CC The present sequence represents a somatotropin protein. The specification
 CC describes a method for stabilizing proteins by modification of cysteine
 CC residues. The derivatized cysteine residues reduce aggregation and
 CC improves stability. The derivatized proteins are useful for alleviating
 CC disease states in animals, improving the growth rate of animals,
 CC especially meat producing animals, and increasing the efficiency of feed
 CC utilization. Some of these compounds also are effective for enhancing the
 CC carcass quality of the animals, i.e. increasing the lean meat to fat
 CC ratio of the animals. Some of the compounds are effective for increasing
 CC milk production in lactating animals and improving wool production in
 CC sheep and other animals raised for coats.
 CC
 XX
 SQ Sequence 194 AA;

Query Match 98.5%; Score 670; DB 20; Length 194;
 Best Local Similarity 99.2%; Pred. No. 5.7e-58;
 Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

OY 2 FFTPLSLRFLPNAMLRARHLHQLAFDYYOEFEAYIRKQKYSPLQNPQTSLSFSSESIPR 61
 DB 4 fptlplslrlfdnamlrarhlhqlafdyqefeeayirkeqkysfllqnpqtslcsesipt 63
 OY 62 PSNREETOQKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNYYDLKDLDEG 121
 DB 64 psnreetqkksnlellrlsllllqswlepvgflrsvfanslvygadsnvydlkdldeg 123
 OY 122 IOTLMGRLEDGSP 134
 DB 124 iqlimgriedgsp 136

Search completed: September 25, 2002, 09:57:39
 Job time: 248 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:56:01 ; Search time 20.68 seconds
(without alignments)
158.270 Million cell updates/sec

Title: US-09-819-094-24

Perfect score: 680
Sequence: 1 MFPTPLSLRLFDNMLRAHR.....LKDEEGIQTLMGLEDGSP 134

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA:*
1: /cgn2_6/ptodata/2/1aa/5A.COMB.pep.*
2: /cgn2_6/ptodata/2/1aa/5B.COMB.pep.*
3: /cgn2_6/ptodata/2/1aa/6A.COMB.pep.*
4: /cgn2_6/ptodata/2/1aa/6B.COMB.pep.*
5: /cgn2_6/ptodata/2/1aa/PCTUS.COMB.pep.*
6: /cgn2_6/ptodata/2/1aa/backfiles1.pep.*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	675	99.3	192	1 US-08-093-383-1	Sequence 1, Appl1
2	670	98.5	191	4 US-09-284-878-5	Sequence 5, Appl1
3	670	98.5	194	2 US-08-383-621-4	Sequence 4, Appl1
4	670	98.5	194	3 US-08-459-906-4	Sequence 4, Appl1
5	670	98.5	217	3 US-08-589-028-10	Sequence 10, Appl1
6	670	98.5	217	3 US-08-784-582-10	Sequence 10, Appl1
7	670	98.5	217	3 US-08-785-271-10	Sequence 10, Appl1
8	670	98.5	217	4 US-08-759-628-11	Sequence 11, Appl1
9	670	98.5	217	4 US-09-284-878-11	Sequence 11, Appl1
10	670	98.5	274	3 US-08-784-582-71	Sequence 71, Appl1
11	670	98.5	360	3 US-08-784-582-73	Sequence 73, Appl1
12	664	97.6	191	4 US-09-465-461-1	Sequence 1, Appl1
13	664	97.6	217	1 US-08-187-756C-4	Sequence 4, Appl1
14	664	97.6	217	1 US-08-469-486-51	Sequence 51, Appl1
15	664	97.6	217	2 US-08-469-658-51	Sequence 51, Appl1
16	664	97.6	217	2 US-08-710-324A-4	Sequence 4, Appl1
17	657	96.6	191	4 US-08-800-215C-18	Sequence 18, Appl1
18	655	96.3	191	4 US-08-800-215C-16	Sequence 16, Appl1
19	655	96.3	191	4 US-08-800-215C-20	Sequence 20, Appl1
20	574.5	84.5	176	3 US-08-791-728-1	Sequence 1, Appl1
21	568.5	83.6	176	3 US-08-791-728-2	Sequence 1, Appl1
22	545	80.1	168	6 5424199-3	Patent No. 5424199
23	543.5	79.9	198	1 US-08-187-756C-5	Sequence 5, Appl1
24	543.5	79.9	198	2 US-08-710-324A-5	Sequence 5, Appl1
25	445	65.4	191	1 US-08-468-824-8	Sequence 8, Appl1
26	443	65.1	191	1 US-07-963-331D-4	Sequence 4, Appl1
27	440	64.7	190	1 US-08-388-267C-2	Sequence 2, Appl1

28	440	64.7	190	4	US-09-277-720-2	Sequence 2, Appl1
29	440	64.7	191	6	5210180-1	Patent No. 5210180
30	440	64.7	193	1	US-07-621-197C-2	Sequence 2, Appl1
31	440	64.7	193	1	US-08-363-982-2	Sequence 2, Appl1
32	440	64.7	193	2	US-08-383-621-1	Sequence 1, Appl1
33	440	64.7	193	3	US-08-459-906-1	Sequence 1, Appl1
34	440	64.7	216	2	US-09-105-651-3	Sequence 3, Appl1
35	438	64.4	190	1	US-07-963-331D-3	Sequence 3, Appl1
36	438	64.4	191	1	US-07-922-523-1	Sequence 1, Appl1
37	438	64.4	191	2	US-08-222-987-1	Sequence 1, Appl1
38	435	64.0	177	1	US-08-187-756C-6	Sequence 6, Appl1
39	435	64.0	177	2	US-08-710-324A-6	Sequence 6, Appl1
40	432	63.5	216	2	US-09-105-651-1	Sequence 1, Appl1
41	425	62.5	191	1	US-08-093-383-3	Sequence 3, Appl1
42	422	62.1	193	2	US-08-383-621-3	Sequence 3, Appl1
43	422	62.1	193	3	US-08-459-906-3	Sequence 3, Appl1
44	418	61.5	191	1	US-07-885-689A-29	Sequence 29, Appl1
45	418	61.5	193	2	US-08-383-621-2	Sequence 2, Appl1

ALIGNMENTS

RESULT 1
US-08-093-383-1
Sequence 1, Application US/08093383
Patent No. 5489529
GENERAL INFORMATION:
APPLICANT: DeBoer, Herman A.
APPLICANT: Heyneker, Herbert L.
APPLICANT: Seeburg, Peter H.
TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone
NUMBER OF SEQUENCES: 30
CORRESPONDENCE ADDRESS:
ADDRESSER: Genentech, Inc.
STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: patin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/093,383
FILING DATE: 14-JUL-1993
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/619827
FILING DATE: 28-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/198824
FILING DATE: 05-APR-1988
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 06/632361
FILING DATE: 19-JUL-1984
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 06/303687
FILING DATE: 18-SEP-1981
ATTORNEY/AGENT INFORMATION:
NAME: Johnston, Sean A.
REGISTRATION NUMBER: P35,910
REFERENCE/DOCKET NUMBER: 46C4
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415/225-3562
TELEFAX: 415/952-9881
TELEX: 910/371-7168
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
TYPE: amino acid

TOPOLOGY: linear
US-08-093-383-1

Query Match 99.3%; Score 675; DB 1; Length 192;
Best Local Similarity 99.3%; Pred. No. 3.6e-72;
Matches 133; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 1 MFPTPLSRFDNMLRAHRLHQLAFDTYQEFEEAYIPKQKYSFLQNPQTSLSFSESIP 60
DB 1 MFPTPLSRFDNMLRAHRLHQLAFDTYQEFEEAYIPKQKYSFLQNPQTSLSFSESIP 60
QY 61 TPSNEETQOKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNVYDLKDLERG 120
DB 61 TPSNEETQOKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNVYDLKDLERG 120
QY 121 GIOTLMGRLEDGSP 134
DB 121 GIOTLMGRLEDGSP 134

RESULT 2
US-09-284-878-5

Sequence 5, Application US/09284878

Patent No. 6342375

GENERAL INFORMATION:

APPLICANT: Olazaran, Martha Guerrero

APPLICANT: Saldana, Hugo Barrera

APPLICANT: Salvado, Jose Maria Viader

TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the

TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone

FILE REFERENCE: 1829.0010000

CURRENT APPLICATION NUMBER: US/09/284,878

CURRENT FILING DATE: 1999-07-21

PRIOR APPLICATION NUMBER: PCT/MX97/00033

PRIOR FILING DATE: 1997-10-24

NUMBER OF SEQ ID NOS: 9

SOFTWARE: PatentIn Ver. 2.1

SEQ ID NO 5

LENGTH: 191

TYPE: PRT

ORGANISM: Homo sapiens

US-09-284-878-5

Query Match 98.5%; Score 670; DB 4; Length 191;
Best Local Similarity 99.2%; Pred. No. 1.4e-71;

Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 FPTPLSRFDNMLRAHRLHQLAFDTYQEFEEAYIPKQKYSFLQNPQTSLSFSESIP 61
DB 1 FPTPLSRFDNMLRAHRLHQLAFDTYQEFEEAYIPKQKYSFLQNPQTSLSFSESIP 60
QY 62 PSNREETQOKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNVYDLKDLERG 121
DB 61 PSNREETQOKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNVYDLKDLERG 120
QY 122 IOTLMGRLEDGSP 134
DB 121 IOTLMGRLEDGSP 133

RESULT 3
US-08-383-621-4

Sequence 4, Application US/08383621

Patent No. 5951972

GENERAL INFORMATION:

APPLICANT: Daley, Michael J.

APPLICANT: Buckwalter, Brian L.

APPLICANT: Cady, Susan M.

APPLICANT: Shieh, Hong-Ming

APPLICANT: Bohlen, Peter

APPLICANT: Seddon, Andrew P.

TITLE OF INVENTION: Stabilization of Somatotropins And Other
TITLE OF INVENTION: Proteins By Modification Of Cysteine Residues

NUMBER OF SEQUENCES: 11

CORRESPONDENCE ADDRESS:

ADDRESSEE: Dr. Estelle J. Tsevdos

STREET: 1937 West Main Street, P.O. Box 60

CITY: Stamford

STATE: Connecticut

COUNTRY: U.S.A.

ZIP: 06904-0060

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PatentIn Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/383,621

FILING DATE: 06-FEB-1995

CLASSIFICATION: 514

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/766,142

FILING DATE: 25-SEP-1991

ATTORNEY/AGENT INFORMATION:

NAME: Tsevdos, Estelle J.

REGISTRATION NUMBER: 31,145

REFERENCE/DOCKET NUMBER: 31,278-01

TELECOMMUNICATION INFORMATION:

TELEPHONE: 203-321-2756

TELEFAX: 203-321-2971

TELEX: 203-710-474-4059

INFORMATION FOR SEQ ID NO: 4:

SEQUENCE CHARACTERISTICS:

LENGTH: 194 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: protein

US-08-383-621-4

Query Match 98.5%; Score 670; DB 2; Length 194;
Best Local Similarity 99.2%; Pred. No. 1.4e-71;

Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 FPTPLSRFDNMLRAHRLHQLAFDTYQEFEEAYIPKQKYSFLQNPQTSLSFSESIP 61
DB 4 FPTPLSRFDNMLRAHRLHQLAFDTYQEFEEAYIPKQKYSFLQNPQTSLSFSESIP 63
QY 62 PSNREETQOKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNVYDLKDLERG 121
DB 64 PSNREETQOKSNLELRISLLIOSWLEPVQFLRSVFANSIYVGASDSNVYDLKDLERG 123
QY 122 IOTLMGRLEDGSP 134
DB 124 IOTLMGRLEDGSP 136

RESULT 4
US-08-459-906-4

Sequence 4, Application US/08459906

Patent No. 6010999

GENERAL INFORMATION:

APPLICANT: Daley, Michael J.

APPLICANT: Buckwalter, Brian L.

APPLICANT: Cady, Susan M.

APPLICANT: Shieh, Hong-Ming

APPLICANT: Bohlen, Peter

APPLICANT: Seddon, Andrew P.

TITLE OF INVENTION: Stabilization of Somatotropins and Other

TITLE OF INVENTION: Proteins by Modification of Cysteine Residues

NUMBER OF SEQUENCES: 11

CORRESPONDENCE ADDRESS:

ADDRESSEE: American Cyanamid Company

STREET: One Cyanamid Plaza

```

: CITY: Wayne
: STATE: New Jersey
: COUNTRY: U.S.A.
: ZIP: 07470-8426
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentln Release #1.0, Version #1.25
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/459,906
: FILING DATE: 02-JUN-1995
: CLASSIFICATION: 514
: ATTORNEY/AGENT INFORMATION:
: NAME: Webster, Darryl L.
: REGISTRATION NUMBER: 34,276
: REFERENCE/DOCKET NUMBER: 31,278-03
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: 201-831-3247
: TELEFAX: 201-831-3305
: INFORMATION FOR SEQ ID NO: 4:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 194 amino acids
: TYPE: amino acid
: TOPOLOGY: linear
: MOLECULE TYPE: protein
: US-08-459-906-4

Query Match          98.5%; Score 670; DB 3; Length 194;
Best Local Similarity 99.2%; Pred. No. 1,4e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY  2  FPTIPLSRLFDNAMLRAHRLHQLAFDTYOEFEAYIPKEOKYSFLONPQTSLSFSSESIP 61
    |||||||
DB  4  FPTIPLSRLFDNAMLRAHRLHQLAFDTYOEFEAYIPKEOKYSFLONPQTSLSFSSESIP 63
    |||||||

QY  62  PSNREFTQOKSNLELLRLISLLIQSMLEPYQFLRSVFANSILVYGASDSNYYDLKDEEG 121
    |||||||
DB  64  PSNREFTQOKSNLELLRLISLLIQSMLEPYQFLRSVFANSILVYGASDSNYYDLKDEEG 123
    |||||||

QY  122  IOTLMGRLEDGSP 134
    |||||||
DB  124  IOTLMGRLEDGSP 136
    |||||||

RESULT  5
US-08-589-028-10
: Sequence 10, Application US/08589028
: Patent No. 6087129
: GENERAL INFORMATION:
: APPLICANT: Newgard, Christopher B.
: APPLICANT: Halban, Philippe
: APPLICANT: No. 6087129mington, Karl D.
: APPLICANT: Clark, Samuel A.
: APPLICANT: Thigpen, Anice E.
: APPLICANT: Quade, Christian
: APPLICANT: Kruse, Fred
: TITLE OF INVENTION: Recombinant Expression of Proteins From
: TITLE OF INVENTION: Secretary Cell Lines
: NUMBER OF SEQUENCES: 50
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: Arnold, White & Durkee
: STREET: P. O. Box 4433
: CITY: Houston
: STATE: TX
: COUNTRY: USA
: ZIP: 77210-4433
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentln Release #1.0, Version #1.30
```

```

: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/589,028
: FILING DATE: Concurrently Herewith
: CLASSIFICATION: 435
: ATTORNEY/AGENT INFORMATION:
: NAME: Highlander, Steven L.
: REGISTRATION NUMBER: 47,642
: REFERENCE/DOCKET NUMBER: UTSD:426\HYL
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: (512) 418-3000
: TELEFAX: (512) 474-7577
: INFORMATION FOR SEQ ID NO: 10:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 217 amino acids
: TYPE: amino acid
: STRANDEDNESS:
: TOPOLOGY: linear
: US-08-589-028-10

Query Match          98.5%; Score 670; DB 3; Length 217;
Best Local Similarity 99.2%; Pred. No. 1,7e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY  2  FPTIPLSRLFDNAMLRAHRLHQLAFDTYOEFEAYIPKEOKYSFLONPQTSLSFSSESIP 61
    |||||||
DB  27  FPTIPLSRLFDNAMLRAHRLHQLAFDTYOEFEAYIPKEOKYSFLONPQTSLSFSSESIP 86
    |||||||

QY  62  PSNREFTQOKSNLELLRLISLLIQSMLEPYQFLRSVFANSILVYGASDSNYYDLKDEEG 121
    |||||||
DB  87  PSNREFTQOKSNLELLRLISLLIQSMLEPYQFLRSVFANSILVYGASDSNYYDLKDEEG 146
    |||||||

QY  122  IOTLMGRLEDGSP 134
    |||||||
DB  147  IOTLMGRLEDGSP 159
    |||||||

RESULT  6
US-08-784-582-10
: Sequence 10, Application US/08784582
: Patent No. 6110707
: GENERAL INFORMATION:
: APPLICANT: Newgard, Christopher B.
: APPLICANT: Halban, Philippe A.
: APPLICANT: No. 6110707mington, Karl D.
: APPLICANT: Clark, Samuel A.
: APPLICANT: Thigpen, Anice E.
: APPLICANT: Quade, Christian
: APPLICANT: Kruse, Fred
: APPLICANT: McGarry, Dennis
: TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
: TITLE OF INVENTION: SECRETORY CELL LINES
: NUMBER OF SEQUENCES: 79
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: Arnold, White & Durkee
: STREET: P. O. Box 4433
: CITY: Houston
: STATE: Texas
: COUNTRY: USA
: ZIP: 77210
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: Patentln Release #1.0, Version #1.30
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/08/784,582
: FILING DATE: Concurrently Herewith
: CLASSIFICATION: 435
: PRIOR APPLICATION DATA:
: APPLICATION NUMBER: US 60/028,427
: FILING DATE: 15-OCT-1996
: PRIOR APPLICATION DATA:
```

APPLICATION NUMBER: US 08/589,028
FILING DATE: 19-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:514
TELECOMMUNICATION INFORMATION:
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-784-582-10

Query Match 98.5%; Score 670; DB 3; Length 217;
Best Local Similarity 99.2%; Pred. No. 1.7e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSLFDNAMIARHLQLAFDYYQFEFAYIPKEQKYSFLQNPQTSLSFSISPT 61
|||||
DB 27 PPTPLSLFDNAMIARHLQLAFDYYQFEFAYIPKEQKYSFLQNPQTSLSFSISPT 86
|||||
QY 62 PSNRETOOKSNLELRISLLSIQSWLEPYQFLRSVPANSIVYGASDSNVYDLKDLREG 121
|||||
DB 87 PSNRETOOKSNLELRISLLSIQSWLEPYQFLRSVPANSIVYGASDSNVYDLKDLREG 146
|||||
QY 122 IQTLMGRLEDGSP 134
|||||
DB 147 IQTLMGRLEDGSP 159
|||||

RESULT 7
US-08-785-271-10
Sequence 10, Application US/08785271
Patent No. 6194176
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe A.
APPLICANT: No. 6194176mington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thigpen, Anice E.
APPLICANT: Quade, Christian
APPLICANT: Kruse, Fred
TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
NUMBER OF SEQUENCES: 56
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
CITY: Houston
STATE: Texas
COUNTRY: USA
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/785,271
FILING DATE: Concurrently Herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/589,028
FILING DATE: 19-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:513

TELECOMMUNICATION INFORMATION:
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-785-271-10

Query Match 98.5%; Score 670; DB 4; Length 217;
Best Local Similarity 99.2%; Pred. No. 1.7e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

QY 2 PPTPLSLFDNAMIARHLQLAFDYYQFEFAYIPKEQKYSFLQNPQTSLSFSISPT 61
|||||
DB 27 PPTPLSLFDNAMIARHLQLAFDYYQFEFAYIPKEQKYSFLQNPQTSLSFSISPT 86
|||||
QY 62 PSNRETOOKSNLELRISLLSIQSWLEPYQFLRSVPANSIVYGASDSNVYDLKDLREG 121
|||||
DB 87 PSNRETOOKSNLELRISLLSIQSWLEPYQFLRSVPANSIVYGASDSNVYDLKDLREG 146
|||||
QY 122 IQTLMGRLEDGSP 134
|||||
DB 147 IQTLMGRLEDGSP 159
|||||

RESULT 8
US-08-759-628-11
Sequence 11, Application US/08759628
Patent No. 622546
GENERAL INFORMATION:
APPLICANT: Altman, Scott W.
APPLICANT: Rock, Fernando L.
APPLICANT: Bazan, J. Fernando
APPLICANT: Kastelein, Robert A.
TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMALIAN PROTEINS
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
COUNTRY: USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/759,628
FILING DATE: 05-DEC-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/008,574
FILING DATE: 06-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX05520
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein

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; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 32..53
;
; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 94..115
;
; FEATURE:
; NAME/KEY: Peptide
; LOCATION: 133..153
;
; NAME/KEY: Peptide
; LOCATION: 192..210
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; OTHER INFORMATION:
; OTHER INFORMATION: /note="The peptides above are
;                     depicted in Figure 1"
US-08-759-628-11
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```

Query Match          98.5%; Score 670; DB 4; Length 217;
Best Local Similarity 99.2%; Pred. No. 1.7e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
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OY 2 FPIPLSRFLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 61
    |||||||
DB 27 FPIPLSRFLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 86

OY 62 PSNREETQOKSNLELRISLLIQSWLEPVOFLRSVFANSVLYGASDSNVYDLKDLKEEG 121
    |||||||
DB 87 PSNREETQOKSNLELRISLLIQSWLEPVOFLRSVFANSVLYGASDSNVYDLKDLKEEG 146

OY 122 IQTLMGRLEDEGSP 134
    |||||||
DB 147 IQTLMGRLEDEGSP 159
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RESULT 9
US-09-284-878-1
; Sequence 1, Application US/09284878
; Patent No. 6342375
;
; GENERAL INFORMATION:
; APPLICANT: Olazaran, Martha Guerrero
; APPLICANT: Saldana, Hugo Barrera
; APPLICANT: Salgado, Jose Maria Viader
; TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
; FILE REFERENCE: 1829.0010000
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
; CURRENT APPLICATION NUMBER: US/09/284,878
; CURRENT FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; PRIOR FILING DATE: 1997-10-24
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 1
; LENGTH: 217
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-1
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```

Query Match          98.5%; Score 670; DB 4; Length 217;
Best Local Similarity 99.2%; Pred. No. 1.7e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
```

```

OY 2 FPIPLSRFLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 61
    |||||||
DB 27 FPIPLSRFLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 86

OY 62 PSNREETQOKSNLELRISLLIQSWLEPVOFLRSVFANSVLYGASDSNVYDLKDLKEEG 121
    |||||||
DB 87 PSNREETQOKSNLELRISLLIQSWLEPVOFLRSVFANSVLYGASDSNVYDLKDLKEEG 146

OY 122 IQTLMGRLEDEGSP 134
    |||||||
DB 147 IQTLMGRLEDEGSP 159
```

```

RESULT 10
US-08-784-582-71
```

```

; Sequence 71, Application US/08784582
```

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; Patent No. 6110707
```

```

; GENERAL INFORMATION:
```

```

; APPLICANT: Newgard, Christopher B.
```

```

; APPLICANT: Halban, Philippe A.
```

```

; APPLICANT: No. 6110707/mington, Karl D.
```

```

; APPLICANT: Clark, Samuel A.
```

```

; APPLICANT: Thigpen, Anice E.
```

```

; APPLICANT: Ouade, Christian
```

```

; APPLICANT: Kruse, Fred
```

```

; APPLICANT: McGarry, Dennis
```

```

; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
```

```

; NUMBER OF SEQUENCES: 79
```

```

; CORRESPONDENCE ADDRESS:
```

```

; ADDRESSEE: Arnold, White & Durkee
```

```

; STREET: P.O. Box 4433
```

```

; CITY: Houston
```

```

; STATE: Texas
```

```

; COUNTRY: USA
```

```

; ZIP: 77210
```

```

; COMPUTER READABLE FORM:
```

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; MEDIUM TYPE: Floppy disk
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```

; COMPUTER: IBM PC compatible
```

```

; OPERATING SYSTEM: PC-DOS/MS-DOS
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```

; SOFTWARE: PatentIn Release #1.0, Version #1.30
```

```

; CURRENT APPLICATION DATA:
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```

; APPLICATION NUMBER: US/08/784,582
```

```

; FILING DATE: Concurrently Herewith
```

```

; CLASSIFICATION: 435
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```

; PRIOR APPLICATION DATA:
```

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; APPLICATION NUMBER: US 60/028,427
```

```

; FILING DATE: 15-OCT-1996
```

```

; PRIOR APPLICATION DATA:
```

```

; APPLICATION NUMBER: US 08/589,028
```

```

; FILING DATE: 19-JAN-1996
```

```

; ATTORNEY/AGENT INFORMATION:
```

```

; NAME: Highlander, Steven L.
```

```

; REGISTRATION NUMBER: 37,642
```

```

; REFERENCE/DOCKET NUMBER: UTSD:514
```

```

; TELECOMMUNICATION INFORMATION:
```

```

; TELEPHONE: 512/418-3000
```

```

; TELEFAX: 512/474-7577
```

```

; INFORMATION FOR SEQ ID NO: 71:
```

```

; SEQUENCE CHARACTERISTICS:
```

```

; LENGTH: 274 amino acids
```

```

; TYPE: amino acid
```

```

; STRANDEDNESS:
```

```

; TOPOLOGY: linear
```

```

US-08-784-582-71
```

```

Query Match          98.5%; Score 670; DB 3; Length 274;
Best Local Similarity 99.2%; Pred. No. 2.4e-71;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
```

```

OY 2 FPIPLSRFLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 61
    |||||||
DB 27 FPIPLSRFLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 86

OY 62 PSNREETQOKSNLELRISLLIQSWLEPVOFLRSVFANSVLYGASDSNVYDLKDLKEEG 121
    |||||||
DB 87 PSNREETQOKSNLELRISLLIQSWLEPVOFLRSVFANSVLYGASDSNVYDLKDLKEEG 146

OY 122 IQTLMGRLEDEGSP 134
    |||||||
DB 147 IQTLMGRLEDEGSP 159
```


SEQUENCE CHARACTERISTICS:
LENGTH: 217 AMINO ACIDS
TYPE: AMINO ACID
STRANDEDNESS:
TOPOLOGY: LINEAR
MOLECULE TYPE: PROTEIN
US-08-187-756C-4

Query Match 97.6%; Score 664; DB 1; Length 217;
Best Local Similarity 98.5%; Pred. No. 8.6e-71;
Matches 131; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 2 FPTIPLSRFLFDNAMLRAHRLHOLAFDTYOEFEFAVYIPKEOKYSFLONPOTLSFSESIPY 61
Db 27 FPTIPLSRFLFDNAMLRAHRLHOLAFDTYOEFEFAVYIPKEOKYSFLONPOTLSFSESIPY 86
Qy 62 PSNREETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIVYGASDSNVYDLKLEEG 121
Db 87 PSNREETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIVYGASDSNVYDLKLEEG 146
Qy 122 IOTLMGRLEDDGSP 134
Db 147 IOTLMGRLEDDGSP 159

RESULT 14
US-08-469-486-51
Sequence 51, Application US/08469486
Patent No. 5739281

GENERAL INFORMATION:
APPLICANT: Thoegeisen, Hans Christian
APPLICANT: Hollet, Thor Las
APPLICANT: Elzerodt, Michael
TITLE OF INVENTION: Improved method for the refolding of
NUMBER OF SEQUENCES: 58
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson
STREET: 225 Franklin Street
CITY: Boston
STATE: Massachusetts
COUNTRY: USA
ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/469,486
FILING DATE:

CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/192,060
FILING DATE: February 4, 1994
ATTORNEY/AGENT INFORMATION:
NAME: Paul T. Clark
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 06363/002001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617 542 5070
TELEFAX: 617 542 8906
TELEX: 200154
INFORMATION FOR SEQ ID NO: 51:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-469-486-51

Query Match 97.6%; Score 664; DB 1; Length 217;
Best Local Similarity 98.5%; Pred. No. 8.6e-71;
Matches 131; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 2 FPTIPLSRFLFDNAMLRAHRLHOLAFDTYOEFEFAVYIPKEOKYSFLONPOTLSFSESIPY 61
Db 27 FPTIPLSRFLFDNAMLRAHRLHOLAFDTYOEFEFAVYIPKEOKYSFLONPOTLSFSESIPY 86
Qy 62 PSNREETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIVYGASDSNVYDLKLEEG 121
Db 87 PSNREETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIVYGASDSNVYDLKLEEG 146
Qy 122 IOTLMGRLEDDGSP 134
Db 147 IOTLMGRLEDDGSP 159

RESULT 15
US-08-469-658-51
Sequence 51, Application US/08469658
Patent No. 5917018

GENERAL INFORMATION:
APPLICANT: Thoegeisen, Hans Christian
APPLICANT: Hollet, Thor Las
APPLICANT: Elzerodt, Michael
TITLE OF INVENTION: IMPROVED METHOD FOR THE REFOLDING OF
NUMBER OF SEQUENCES: 58
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 225 Franklin Street
CITY: Boston
STATE: Massachusetts
COUNTRY: USA
ZIP: 02110-2804
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/469,658
FILING DATE: June 5, 1995
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/192,060
FILING DATE: February 4, 1994
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Paul T. Clark
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 06363/002002
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617 542 5070
TELEFAX: 617 542 8906
TELEX: 200154
INFORMATION FOR SEQ ID NO: 51:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-469-658-51

Query Match 97.6%; Score 664; DB 2; Length 217;
Best Local Similarity 98.5%; Pred. No. 8.6e-71;
Matches 131; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

```
OY 2 FPTPLSRLEPDMAMLAHRLHOLAFTYQEFEEAYTPKEOKYSFLQNPQTSLSFSES IPT 61
    |||||||
Db 27 FPTPLSRLEPDMASLRAHRLHOLAFTYQEFEEAYTPKEOKYSFLQNPQTSLSFSES IPT 86
    |||||||
OY 62 PSNREETOOKSNLELIRISLLIQSNLEPVQFLRSVFANSLSVYGASDSNVYDLKDLBEG 121
    |||||||
Db 87 PSNREETOOKSNLELIRISLLIQSNLEPVQFLRSVFANSLSVYGASDSNVYDLKDLBEG 146
    |||||||
OY 122 IQTLMGRLEDDGSP 134
    |||||||
Db 147 IQTLMGRLEDDGSP 159
    |||||||
```

Search completed: September 25, 2002, 09:56:40
Job time: 159 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:55:31 ; Search time 28.13 Seconds
(without alignments)
457.731 Million cell updates/sec

Title: US-09-819-094-24

Perfect score: 680

Sequence: 1 MEPTPLSRFLPDNMLRAHR.....LKDEEGIQTLGRLEDGSP 134

Scoring table: BIOSUM62

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	670	98.5	217	1	STHU
2	645	94.9	217	2	somatotropin 1 pre
3	603	88.7	217	1	STHUV
4	570.5	83.9	256	1	somatotropin 2 pre
5	558	82.1	217	2	somatotropin 2 pre
6	550	80.9	212	2	chorionic somatoma
7	550	80.9	217	2	chorionic somatoma
8	549	80.7	217	2	somatotropin - the
9	548	80.6	217	1	chorionamnionotropin
10	548	80.6	217	2	chorionamnionotropin
11	517	76.0	215	2	chorionamnionotropin
12	445	65.4	216	2	somatotropin - gol
13	441	64.9	190	2	somatotropin - sel
14	440	64.7	190	2	somatotropin - the
15	440	64.7	216	1	STPG
16	440	64.7	216	1	somatotropin - the
17	440	64.7	216	2	somatotropin - the
18	439	64.6	216	2	somatotropin - the
19	438	64.4	216	2	somatotropin - the
20	437	64.3	216	1	STRT
21	436	64.1	190	1	A61584
22	434	63.8	190	2	somatotropin - alp
23	434	63.8	216	2	somatotropin - Arc
24	432	63.5	190	1	STHO
25	418	61.5	217	1	STBO
26	409	60.1	217	1	STSH
27	409	60.1	217	1	STGT
28	409	60.1	217	2	S32682
29	400	58.8	216	2	JC1514

30	397	58.4	191	2	A60625	somatotropin - gre
31	397	58.4	216	2	A60509	somatotropin - gre
32	390	57.4	199	2	B32435	chorionamnionotropin -
33	387.5	56.2	216	2	S04929	somatotropin - precu
34	343	50.4	190	2	S21750	somatotropin - Rus
35	339	49.9	195	2	S15250	somatotropin - bov
36	334	49.1	190	2	A56816	somatotropin - bul
37	325	47.8	215	2	S15188	somatotropin - bul
38	324	47.6	215	2	JS0037	somatotropin - precu
39	290.5	42.7	183	2	A60623	somatotropin - blu
40	256	37.6	209	2	J70483	somatotropin I pre
41	241.5	35.5	163	2	JN0387	somatotropin - sel
42	235	34.6	139	2	S04353	somatotropin A - A
43	215	31.6	210	2	S150763	somatotropin - nob
44	215	31.6	210	2	S38351	somatotropin - sll
45	215	31.6	210	2	S21915	somatotropin - sll

ALIGNMENTS

RESULT 1

STHU

somatotropin 1 precursor [validated] - human

N:Alternate names: growth hormone 1; hGH-N; pituitary somatotropin

N:Contains: growth hormone 3K peptide; somatotropin 1, long form; somatotropin 1, sho

C:Species: Homo sapiens (man)

C>Date: 24-Apr-1984 #sequence-revision 10-Feb-1995 #text-change 08-Dec-2000

C:Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217;

R:Denote: F.M.; Moore, D.D.; Goodman, H.M.

Nucleic Acids Res. 9, 3719-3730, 1981

A:Title: Human growth hormone DNA sequence and mRNA structure: possible alternative s

A:Reference number: A93731; MUID:82014939

A:Accession: A93731

A:Molecule type: DNA

A:Residues: 1-217 <DEN>

A:Cross-references: GB:V00520

A:Note: The 20K short form somatotropin lacks residues 58-72 (32-46 in the active hor

R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg,

Genomics 4, 479-497, 1989

A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A:Reference number: A32435; MUID:89307277

A:Accession: A32435

A:Molecule type: DNA

A:Residues: 1-217 <CH>

A:Cross-references: GB:J03071; NID:G183148; PIDN:AAA52549.1; PID:G183149

R:Roskam, W.; Rougeon, F.

Nucleic Acids Res. 7, 305-320, 1979

A:Title: Molecular cloning and nucleotide sequence of the human growth hormone struct

A:Reference number: A93694; MUID:80034477

A:Accession: A93694

A:Molecule type: mRNA

A:Residues: 1-217 <ROS>

A:Cross-references: GB:V00519

A:Note: 35-Pro was also found

R:Marfali, J.A.; Halliwell, R.A.; Baxter, J.D.; Goodman, H.M.

Science 205, 602-607, 1979

A:Title: Human growth hormone: complementary DNA cloning and expression in bacteria.

A:Reference number: A94247; MUID:79203293

A:Accession: A94247

A:Molecule type: mRNA

A:Residues: 1-217 <MAR>

R:Li, C.H.; Dixon, J.S.; Liu, W.K.

Arch. Biochem. Biophys. 133, 70-91, 1969

A:Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.

A:Reference number: A90048; MUID:69289202

A:Contents: annotation

R:Li, C.H.; Dixon, J.S.

Arch. Biochem. Biophys. 146, 233-236, 1971

A:Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone:

A:Reference number: A90051; MUID:72143935

A:Accession: A90051

A:Molecule type: protein

A:Residues: 27-94;96-217 <LIC>
 R:Nall, H.D.
 Nature New Biol. 230, 90-91, 1971
 A:Title: Revised primary structure for human growth hormone.
 A:Reference number: A93397; MOID:71139765
 A:Accession: A93397
 A:Molecule type: protein
 A:Residues: 27-51 <NIA>
 R:Nall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
 Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
 A:Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution
 A:Reference number: A93778; MOID:71153968
 A:Accession: A93778
 A:Molecule type: protein
 A:Residues: 119-120;157-159 <NI2>
 R:Nall, H.D.
 In Prolactin and Carcinogenesis, Proc. Fourth Genovus Workshop Prolactin, Griffiths, K.A.
 A:Title: The chemistry of the human lactogenic hormones.
 A:Reference number: A94427
 A:Contents: annotation; somatotropin revision
 R:Bewley, T.A.; Dixon, J.S.; Li, C.H.
 Int. J. Pept. Protein Res. 4, 281-287, 1972
 A:Title: Sequence comparison of human pituitary growth hormone, human chorionic somatom
 A:Reference number: A91764; MOID:73092028
 A:Accession: A91764
 A:Molecule type: protein
 A:Residues: 27-217 <BEM>
 R:Lewis, U.J.; Bonewald, L.F.; Lewis, L.J.
 Biochem. Biophys. Res. Commun. 92, 511-516, 1980
 A:Title: The 20,000-dalton variant of human growth hormone: location of the amino acid c
 A:Reference number: A90217; MOID:80130196
 A:Contents: somatotropin, 20K short variant
 A:Accession: A90217
 A:Molecule type: protein
 A:Residues: 46-57;73-80 <LEM>
 R:Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.; Ca
 J. Biol. Chem. 256, 2395-2401, 1981
 A:Title: The 20,000 molecular weight variant of human growth hormone. Preparation and se
 A:Reference number: A92311; MOID:81117361
 A:Contents: somatotropin, 20K short variant
 A:Accession: A92311
 A:Molecule type: protein
 A:Residues: 27-57;73-79 <CHA>
 R:Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
 J. Protein Chem. 2, 425-436, 1983
 A:Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
 A:Reference number: A61466
 A:Accession: A61466
 A:Molecule type: protein
 A:Residues: 27-69 <SIN>
 A:Note: growth hormone 5K peptide has insulin potentiating activity; its physiological f
 R:Robson, V.M.J.; Ree, I.D.; NG, F.
 Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
 A:Title: Identification of the aspartinide structure in a previously-reported peptide.
 A:Reference number: S09685; MOID:90334745
 A:Accession: S09685
 A:Molecule type: protein
 A:Residues: 27-34; 'L', 36-47 <ROB>
 R:de Vos, A.M.; Ullrich, M.; Kossiakoff, A.A.
 Science 255, 306-312, 1992
 A:Title: Human growth hormone and extracellular domain of its receptor: crystal structu
 A:Reference number: A41728; MOID:92196577
 A:Contents: annotation; X-ray crystallography, 2.8 angstroms
 A:Note: the structure of the complex with growth hormone receptor is described
 R:Gray, G.L.; Balridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
 Gene 39, 247-254, 1985
 A:Title: Periplasmic production of correctly processed human growth hormone in Escherich
 A:Reference number: I41126; MOID:86137393
 A:Accession: I84549
 A:Molecule type: protein
 A:Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 126 <RES>
 A:Cross-references: GB:M14398; NID:9183158; PIDN:AAA52554.1; PID:9183159

C:Comment: The gene for this hormone is transcribed only in somatotrophic cells of th
 C:Comment: About 90% of somatotropin is the 22K long form.
 C:Genetics:
 A:Gene: GDB:GH1
 A:Cross-references: GDB:119982; OMIM:139250
 A:Map position: 17q23.1-17q23.3
 A:Introns: 4/1; 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; pituitary
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 1, long form #status experimental <SOL>
 F:27-69/Product: growth hormone 5K peptide #status experimental <SKP>
 F:27-57/73-217/Product: somatotropin 1, short form #status experimental <SOS>
 F:79-191,208-215/Disulfide bonds: #status experimental

Query Match 98.5%; Score 670; DB 1; Length 217;
 Best Local Similarity 99.2%; Pred. No. 5,3e-58;
 Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
 Oy 2 FPTPLSRFLDNMLRAHRLHOLAPDTYOEFEAYIPKOKYSFIONPOTSFSSES IPT 61
 Db 27 FPTPLSRFLDNMLRAHRLHOLAPDTYOEFEAYIPKOKYSFIONPOTSFSSES IPT 86
 Oy 62 PSNREFTQOKSNELRLISLLIQSWLEPVQFLRSVANSVLYGASDSNVYDLKDLDEEG 121
 Db 87 PSNREFTQOKSNELRLISLLIQSWLEPVQFLRSVANSVLYGASDSNVYDLKDLDEEG 146
 Oy 122 IQTLMGRLDEGSP 134
 Db 147 IQTLMGRLDEGSP 159

RESULT 2
 167410
 somatotropin - rhesus macaque
 N:Alternate names: growth hormone
 C:Species: Macaca mulatta (rhesus macaque)
 C>Date: 31-May-1996 #sequence; revision 31-May-1996 #text_change 16-Jul-1999
 C:Accession: 167410; A05094
 R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
 Endocrinology 133, 1744-1752, 1993
 A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complemen
 A:Reference number: 153267; MOID:94008724
 A:Accession: 167410
 A:Status: translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-217 <RES>
 A:Cross-references: GB:116556; NID:9293114; PIDN:AAA18842.1; PID:9293115
 R:Li, C.H.; Chung, D.; Iahn, H.W.; Stein, S.
 Arch. Biochem. Biophys. 245, 287-291, 1986
 A:Title: The primary structure of monkey pituitary growth hormone.
 A:Reference number: A05094; MOID:86129460
 A:Accession: A05094
 A:Molecule type: protein
 A:Residues: 27-99; 'Q', 101-178, 'D', 180-217 <LIC>
 A:Note: the monkey species is not identified in the reference
 R:Reber, M.S.
 Science 125, 883-884, 1957
 A:Title: Preparation of growth hormone from pituitaries of man and monkey.
 A:Reference number: A44774
 A:Contents: annotation; identification of source organism
 C:Superfamily: prolactin

Query Match 94.9%; Score 645; DB 2; Length 217;
 Best Local Similarity 97.0%; Pred. No. 1.3e-55;
 Matches 138; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
 Oy 2 FPTPLSRFLDNMLRAHRLHOLAPDTYOEFEAYIPKOKYSFIONPOTSFSSES IPT 61
 Db 27 FPTPLSRFLDNMLRAHRLHOLAPDTYOEFEAYIPKOKYSFIONPOTSFSSES IPT 86

A:Cross-references: GB:L16554; NID:g2933112; PIDN:AAA18841.1; PID:g2933113
C:Superfamily: prolactin

Query Match	82.1%;	Score 558;	DB 2;	Length 217;
Best Local Similarity	81.1%;	Pred. No. 4.5e-47;		
Matches 107; Conservative	13;	Mismatches 12;	Indels 0;	Gaps 0;

[illegible]

```

RESULT      6
167408
Chorionic somatomammotropin-2 - rhesus macaque (fragment)
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: 167408
R:GOLOS, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary
A:Reference number: 155267; MUID:94008724
A:Accession: 167408
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-212 <RES>
A:Cross-references: GB:IL16553; NID:G293110; PIDN:AAA18840.1; PID:G293111
A:Superfamily: prolactin

```

[illegible]

```

RESULT 7
I53267
chorionic somatomammotropin-1 - rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: I53267
R:Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary
A:Reference number: I53267; MUID:94008724
A:Accession: I53267
A:Status: preliminary; translated from GB/EMBL/DBD
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:I166552; NID:q2933108; PIDN:AAA18839.1; PID:q2933109
A:Superfamily: prolactin

```

Query Match 80.9%; Score 550; DB 2; Length 217;
Best Local Similarity 79.5%; Pred. No. 2.7e-46;
Matches 105; Conservative 17; Mismatches 10; Indels 0; Gaps 0;

[illegible]

```

RESULT      8
167411
somatotropin - rhesus macaque
N:Alternate names: growth hormone
C:Species: Macaca mulatta (rhesus macaque)
C:Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: 167411
R:GOLDS, I.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A:Title: Cloning of four growth hormone/chorionic somatomotropin-related complemen
A:Reference number: 153267; MUID:94008724
A:Accession: 167411
A:Status: preliminary; translated from GR/EMBL/DDBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>
A:Cross-references: GB:LL16555; NID:9293116; PIDN:AAA20180.1; PID:9293117
A:Superfamily: prolactin

```

[illegible]

RESULT 9
LCHUC
Chorionommatotropin A precursor [validated] - human
N: Alternate names: chorionic somatomotropin 1; placental lactogen
C: Species: Homo sapiens (man)
C: Date: 23-Oct-1981 #sequence, revision 23-Oct-1981 #text change 08-Dec-2000
C: Accession: C32435, A94422, T57347, A93833, A93199, A90054, A54427, A61283, T55229;
R: Chen, E.Y.J., Liao, Y.C., Smith, D.H., Barreta-Saldana, H.A., Gelinas, R.E., Seeburg,
Genomics 4, 479-497, 1989
A: Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
A: Reference number: A32435; MUID: 89307277
A: Accession: C32435
A: Molecule type: DNA
A: Residues: 1-217 <GB>
A: Cross-references: GB: J03071; NID: g183148; PIDN: AAA52551.1; PID: g183151
R: Goodman, H.M.; Denoto, F.; Fiddes, J.C.; Halliwell, R.A.; Page, G.S.; Smith, S.; T
in Mobilization and Reassembly of Genetic Information, Scott, W.A.; Werner, R., Joseph
A: Reference number: A94422
A: Accession: A94422


```

:  ::|||::||| ||||| ||||| ||||| |||
Db      60  PTGDEAQQRSVDVLLRFSLLLIQSMGVPQFLSRVFTNSLVFGTSD-RVYEKIKDLEEG 118
OY      122  IQLMGRLDGGSP 134
        || || |||||
Db      119  IQLMRELDGSP 131

```

RESULT 15

STPG

somatotropin precursor - pig

C:Species: Sus scrofa domestica (domestic pig)

C:Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 18-Jun-1999

C:Accession: JMW0015; S09015; I46584; I46584; PC1063; A01516; A94594

R:Vize, P.D.; Wells, J.R.E.

Gene 55, 339-344, 1987

A:Title: Isolation and characterization of the porcine growth hormone gene.

A:Reference number: JMW0015; MUID:88030700

A:Accession: JMW0015

A:Molecule type: DNA

A:Residues: 1-216 <VIZ>

A:Cross-references: GB:M17704; NID:q164475; PIDN:AAA31044.1; PID:q164476

R:Kato, Y.; Shimokawa, N.; Kato, T.; Hirai, T.; Yoshikawa, K.; Kawai, H.; Hattori, M.A.;

Biochim. Biophys. Acta 1048, 290-293, 1990

A:Title: Porcine growth hormone: molecular cloning of cDNA and expression in bacterial

A:Reference number: S09015; MUID:90212653

A:Accession: S09015

A:Molecule type: mRNA

A:Residues: 1-216 <KAT>

A:Cross-references: GB:X53325; NID:q288361; PIDN:CAA37411.1; PID:q288362

R:Seeburg, P.H.; Sias, S.; Adelman, J.P.; de Boer, H.A.; Hayflick, J.; Jhurani, P.; Goed

DNA 2, 37-45, 1983

A:Title: Efficient bacterial expression of bovine and porcine growth hormones.

A:Reference number: I45898; MUID:83209123

A:Accession: I4584

A:Molecule type: mRNA

A:Status: preliminary; translated from GB/EMBL/DBJ

A:Residues: 7-8, 'V', '10-21, 'Q', '23-216 <SEE>

A:Cross-references: GB:M27326; NID:q164477; PIDN:AAA31045.1; PID:q164478

R:Su, T.

Gene 69, 81-89, 1988

A:Title: A multisite-directed mutagenesis using T7 DNA polymerase: application for recon

A:Reference number: I46585; MUID:89137997

A:Accession: I46585

A:Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-8, 'V', '10-21, 'Q', '23-42 <SU>

A:Cross-references: GB:M22761; NID:q164479; PIDN:AAA31046.1; PID:q164480

R:Yang, Q.; Zhu, B.L.; Zhou, S.W.; Qi, S.Z.

Chinese J. Biotechnol. 8, 318-323, 1992

A:Title: Cloning and partly sequencing of the porcine growth hormone (pGH) gene from pit

A:Reference number: PC1063

A:Accession: PC1063

A:Molecule type: mRNA

A:Residues: 97-108, 'E', '110-158 <YAN>

A:Experimental source: pituitary

R:Miller, J.B.; Howard, S.C.; Scapa, S.; Wilhelm, A.E.

J. Biol. Chem. 245, 3407-3415, 1970

A:Title: Cyanogen bromide cleavage and partial amino acid sequence of porcine growth hor

A:Reference number: A01516; MUID:70293161

A:Accession: A01516

A:Molecule type: protein

A:Residues: 140-148 <MIZ>

C:Genetics:

A:Gene: gh

A:introns: 4/1; 57/3; 96/3; 150/3

C:Superfamily: prolactin
 C:Keywords: anterior pituitary; growth factor; hormone
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-216/Product: somatotropin #status predicted <MAT>
 F:78-189/Disulfide bonds: #status predicted
 F:206-214/Disulfide bonds: #status experimental

Query Match

Best local Similarity 64.7%; Score 440; DB 1; Length 216;
 Best local Similarity 66.9%; Pred. No. 1.5e-35;

Matches 89; Conservative 16; Mismatches 26; Indels 2; Gaps 2;

```

OY      2  PPTPLSLRFLDAMRAHRLHOLADFTYQEEFEAYIPEKQYIFLQNFQISLFSSEIPT 61
        ||:|||| || ||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      27  FPAMPPLSLFLANAVLRAOHLHOLADTYKEFERAYIPGQRYS-IQNQAAFCSSETIPA 85
OY      62  PSNRRETOOKSNLELRLISLLIQSMLEPVQFLRSVFANSLVYGASDSNVYDLKDEEG 121
        ||:||||:||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Db      86  PTGKDEAQQRSVDVLLRFSLLLIQSMGVPQFLSRVFTNSLVFGTSD-RVYEKIKDLEEG 144
OY      122 IQLMGRLDGGSP 134
        || || |||||
Db      145 IQLMRELDGSP 157

```

Search completed: September 25, 2002, 09:58:12
 Job time: 161 sec

GenCore version 4.5
Copyright (c) 1993 - 2000 CompuGen Ltd.

OM protein - protein search, using sw model

Run on: September 25, 2002, 09:57:06 ; Search time 15.8 Seconds

(without alignments)
328,381 Million cell updates/sec

Title: US-09-819-094-24

Perfect score: 1 MFPTPLSLRFLDNAMRAHR.....LKDLSEGIOTLGRLEDGSP 134

Sequence: BLOSUM62

Scoring table: GAPOP 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt_40.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	67.0	98.5	217	1	SOMA_HUMAN P01241 homo sapien
2	64.5	94.9	217	1	SOMA_MACMU P33093 macaca mula
3	62.1	91.3	217	1	SOMA_CALJA O9gmb3 callithrix
4	60.8	89.4	217	1	SOMA_SAIIB P58343 salmieri bol
5	59.8	87.9	217	1	SOMA_HUMAN P01242 homo sapien
6	56.5	83.2	256	1	SOMA_HUMAN P09587 homo sapien
7	54.8	80.6	217	1	PLT_HUMAN P01243 macaca mula
8	53.5	78.7	217	1	SOMA_MACMU P07370 macaca mula
9	44.5	65.4	216	1	SOMA_BALBO P33092 balaenopter
10	44.1	64.9	190	1	SOMA_LOXAP P20392 loxodonta a
11	44.0	64.7	190	1	SOMA_CANFA P33711 canis fam11
12	44.0	64.7	216	1	SOMA_FELCA P46404 felis silve
13	44.0	64.7	216	1	SOMA_PIG P01248 sus scrofa
14	43.9	64.6	216	1	SOMA_MOUSE P06880 mus musculu
15	43.8	64.4	216	1	SOMA_MUSVI P19795 mustela vis
16	43.7	64.3	216	1	SOMA_RAT P01244 rattus norv
17	43.6	64.1	190	1	SOMA_LAMPA P37885 lama guanac
18	43.6	63.8	190	1	SOMA_VULVU P10766 vulpes vulp
19	43.4	63.8	216	1	SOMA_RABIT P46407 coryctolagus
20	43.4	63.5	216	1	SOMA_HORSE P01245 equus cabal
21	43.2	63.4	217	1	SOMA_NYCPY O9gmb2 nycticebus
22	43.1	63.3	217	1	SOMA_GALSE O9gmb1 galago sene
23	42.5	62.5	217	1	SOMA_MONDEL P09160 monodelphis
24	42.0	61.8	215	1	SOMA_TRIVU O62754 trichosurus
25	41.8	61.5	217	1	SOMA_BOVIN P01246 bos taurus
26	41.8	61.5	217	1	SOMA_CEREL P56437 cervus elap
27	41.8	60.1	217	1	SOMA_BUBBU O18938 bubalus bub
28	41.1	60.1	217	1	SOMA_SHEEP P01247 ovis aries
29	40.9	58.8	216	1	SOMA_MELGA P22027 melalegris g
30	40.0	58.4	190	1	SOMA_CRONO P55705 crocodylus
31	39.7	58.4	191	1	SOMA_CHEMY P34003 chelonida my
32	39.7	58.4	216	1	SOMA_CHICK P08998 gallus gall
33	39.7	58.4	216	1	SOMA_CHICK P08998 gallus gall

34	39.3	57.8	217	1	SOMA_STRCA O9pwg3 struthio ca
35	38.5	56.2	216	1	SOMA_ANAPL P12828 anas platyr
36	35.4	52.1	214	1	SOMA_XENIA P12855 xenopus lae
37	34.8	51.2	211	1	SOMA_LEPOS P79885 lepisosteus
38	34.3	50.4	190	1	SOMA_ACIGU P26773 acipenser g
39	34.3	50.4	190	1	SOMA_ACIGU P26773 acipenser g
40	34.3	47.8	215	1	SOMA_RANCA P10813 rana catesb
41	30.5	44.3	213	1	SOMA_BUEWA O73849 bufo marinu
42	29.5	43.5	208	1	SOMA_XENLA P12856 xenopus lae
43	29.5	42.7	183	1	SOMA_PRIGL P34006 ptilonace gl
44	28.5	42.1	206	1	SOMA_PROAN O73848 protopteris
45	25.9	38.1	209	1	SOMA_ANGJA P08899 anguilla ja

ALIGNMENTS

RESULT	ID	SOMA_HUMAN	STANDARD	PRT	217 AA.
AC	P01241				
DT	21-JUL-1986 (Rel. 01, Created)				
DT	01-MAR-1992 (Rel. 21, Last sequence update)				
DT	16-OCT-2001 (Rel. 40, Last annotation update)				
DE	Somatotropin precursor (Growth hormone).				
GN	GHL				
OS	Homo sapiens (Human).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.				
OX	NCBI_TaxID=9606;				
OX	[1]				
RP	SEQUENCE FROM N.A.				
RP	MEDLINE=82014939; PubMed=6269091;				
RA	Denoto F.M., Moore D.D., Goodman H.M.;				
RT	"Human growth hormone DNA sequence and mRNA structure: possible				
RT	alternative splicing."				
RL	Nucleic Acids Res. 9:3719-3730(1981).				
RL	[2]				
RP	SEQUENCE FROM N.A.				
RP	MEDLINE=80034477; PubMed=386281;				
RA	Roskam W., Rougeon F.;				
RT	"Molecular cloning and nucleotide sequence of the human growth				
RT	hormone structural gene."				
RL	Nucleic Acids Res. 7:305-320(1979).				
RL	[3]				
RP	SEQUENCE FROM N.A.				
RP	MEDLINE=79203293; PubMed=377496;				
RA	Martial J.A., Halliwell R.A., Baxter J.D., Goodman H.M.;				
RT	"Human growth hormone: complementary DNA cloning and expression in				
RT	bacteria."				
RL	Science 205:602-607(1979).				
RL	[4]				
RP	SEQUENCE FROM N.A.				
RP	MEDLINE=89307277; PubMed=2744760;				
RA	Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,				
RT	Gallinas R.E., Seeburg P.H.;				
RT	"The human growth hormone locus: nucleotide sequence, biology, and				
RT	evolution."				
RL	Genomics 4:479-497(1989).				
RL	[5]				
RP	SEQUENCE OF 27-217.				
RP	MEDLINE=69289202; PubMed=5810834;				
RA	Li C.H., Dixon J.S., Liu W.-K.;				
RT	"Human pituitary growth hormone. XIX. The primary structure of the				
RT	hormone."				
RL	Arch. Biochem. Biophys. 133:70-91(1969).				
RL	[6]				
RP	SEQUENCE OF 27-217, AND REVISIONS.				
RP	MEDLINE=72143935; PubMed=5144027;				
RA	Li C.H., Dixon J.S.;				
RT	"Human pituitary growth hormone. 32. The primary structure of the				
RT	hormone: revision."				
RL	Arch. Biochem. Biophys. 146:233-236(1971).				

RN [7]
 RP SEQUENCE OF 27-51 AND 104-120
 RA MEDLINE=71139765; PubMed=5279046;
 RA Niall H.D.;
 RT "Revised primary structure for human growth hormone.";
 RL Nature New Biol. 230:90-91(1971).
 RN [8]
 RP REVISION.
 RA MEDLINE=73092028; PubMed=4675454;
 RA Bewley T.A., Dixon J.S., Li C.H.;
 RT "Sequence comparison of human pituitary growth hormone, human chorionic somatomammotropin, and ovine pituitary growth and lactogenic hormones.";
 RT Int. J. Pept. Protein Res. 4:281-287(1972).
 RN [9]
 RP REVISION.
 RA Niall H.D.;
 RT "The chemistry of the human lactogenic hormones.";
 RL (In) Griffiths K. (eds.);
 RL Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin, pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
 RN [10]
 RP REVISIONS TO 119-120 AND 157-159.
 RA MEDLINE=71153968; PubMed=5279528;
 RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
 RT "Sequences of pituitary and placental lactogenic and growth hormones: evolution from a primordial peptide by gene reduplication.";
 RT Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
 RN [11]
 RP SEQUENCE OF 27-57 AND 73-79.
 RA MEDLINE=8117361; PubMed=7462247;
 RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J., Turner C., Cary P.D., Crane-Robinson C.;
 RT "The 20,000 molecular weight variant of human growth hormone. Preparation and some physical and chemical properties.";
 RT J. Biol. Chem. 256:2395-2401(1981).
 RN [12]
 RP SEQUENCE OF 46-57 AND 73-80
 RA MEDLINE=80130196; PubMed=7336479;
 RA Lewis U.J., Bonewald L.F., Lewis L.J.;
 RT "The 20,000-dalton variant of human growth hormone: location of the amino acid deletions.";
 RT Biochem. Biophys. Res. Commun. 92:511-516(1980).
 RN [13]
 RP 3D-STRUCTURE MODELING.
 RA MEDLINE=88190073; PubMed=3447173;
 RA Cohen F.E., Kuntz I.D.;
 RT "Prediction of the three-dimensional structure of human growth hormone.";
 RL Proteins 2:162-166(1987).
 RN [14]
 RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RA MEDLINE=92196577; PubMed=1549776;
 RA de Vos A.M., Uitsch M., Kossiakoff A.A.;
 RT "Human growth hormone and extracellular domain of its receptor: crystal structure of the complex.";
 RT Science 255:306-312(1992).
 RN [15]
 RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
 RA MEDLINE=95075462; PubMed=7984244;
 RA Somers W., Uitsch M., de Vos A.M., Kossiakoff A.A.;
 RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
 RL Nature 372:478-481(1994).
 RN [16]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
 RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J., Pavlovsk A.G., Wlodawer A.;
 RT "The crystal-structure of wild-type growth-hormone at 2.5-A resolution.";
 RL Protein Pept. Lett. 2:333-340(1995).
 RN [17]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
 RA MEDLINE=97113023; PubMed=8943276;
 RX

RA Sundstrom M., Lundqvist T., Roedin J., Giebel L.B., Milligan D., Norstedt G.;
 RT "Crystal structure of an antagonist mutant of human growth hormone, GL20R, in complex with its receptor at 2.9-A resolution.";
 RT J. Biol. Chem. 271:32197-32203(1996).
 CC - FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
 CC - SUBCELLULAR LOCATION: Secreted.
 CC - ALTERNATIVE PRODUCTS: A 20 kDa SHORT VARIANT WHICH LACKS 58-72 IS PRODUCED AS THE RESULT OF SPLICING AT THE ALTERNATE JUNCTION OF THE SECOND INTRON.
 CC - DISEASE: DEFECTS IN GH1 ARE A CAUSE OF PITUITARY DWARFISM I AND IV.
 CC - PHARMACEUTICAL: Available under the names Nutropin or Pitropin (Genentech), Norditropin (Novo Nordisk), Genotropin (Pharmacia Upjohn), Humatrope (Eli Lilly) and Saizen or Serostim (Serono). Used for the treatment of growth hormone deficiency and for Turner's syndrome.
 CC - SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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 CC -----
 DR EMBL: V00519; CAA23778.1; -;
 DR EMBL: J03071; AAA52549.1; -;
 DR EMBL: M13438; AAA98618.1; -;
 DR EMBL: A12770; CAA01057.1; -;
 DR EMBL: A00469; CAA00065.1; -;
 DR PIR: A01510; STNH.
 DR PIR: A32435; A32435.
 DR PDB: 3HHR; 30-APR-94.
 DR PDB: 1HWU; 31-JAN-94.
 DR PDB: 1HGU; 07-DEC-95.
 DR PDB: 1HWG; 19-NOV-97.
 DR PDB: 1HWH; 19-NOV-97.
 DR PDB: 1AXI; 28-JAN-98.
 DR PDB: 1A22; 29-APR-98.
 DR PDB: 1BP3; 23-SEP-98.
 DR MIM: 139250; -;
 DR MIM: 262400; -;
 DR MIM: 262650; -;
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone, 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 KW Pituitary; Hormone; Alternative splicing; Signal; 3D-structure; Dwarfism; Pharmaceutical; Polymorphism.
 FT SIGNAL 1 26
 FT CHAIN 27 217 SOMATOTROPIN.
 FT DISULFID 79 191
 FT DISULFID 208 215
 FT VARSPIC 58 72
 FT VARIANT 3 3
 FT VARIANT 105 105
 FT VARIANT 136 136
 FT VARIANT 136 136
 FT HELIX 32 61
 FT HELIX 64 72
 FT TURN 76 77
 FT TURN 80 83
 FT HELIX 90 94
 FT TURN 95 95
 FT HELIX 98 110
 FT TURN 111 114
 FT HELIX 115 125
 MISSING (IN 20 KDA ISOFORM).
 T -> A (IN DBSNP:2001345).
 S -> C (IN DBSNP:6174).
 /FTid=VAR_011917.
 /FTid=VAR_011918.
 V -> I (IN DBSNP:5388).
 /FTid=VAR_011919.

Query Match 98.5%; Score 670; DB 1; Length 217;
Best Local Similarity 99.2%; Pred. No. 2.5e-58;
Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

2 FPTPLSRLEFDNMLRAHRLHQLAFDPTVOEFEEAYIPKQKYSFLONPQTSLSFSES IPT 61
|||||
27 FPTPLSRLEFDNMLRAHRLHQLAFDPTVOEFEEAYIPKQKYSFLONPQTSLSFSES IPT 86

62 PSNRETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIYVGSADSNVYDLKLEEG 121
|||||
87 PSNRETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIYVGSADSNVYDLKLEEG 146

122 IOTLMGRLEEGSP 134
|||||
147 IOTLMGRLEEGSP 159

RESULT 2
SOMA_MACMU STANDARD; PRT; 217 AA.
AC P33093;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 01-FEB-1996 (Rel. 33, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHL.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Macaca.
OX NCBI_TaxID=9544;
RN
RP SEQUENCE FROM N.A.
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
RN
RP SEQUENCE OF 27-217.
RX MEDLINE=86129460; PubMed=3080959;
RA Li C.H., Chung D., Labm H.W., Stein S.;
RT "The primary structure of monkey pituitary growth hormone.";
RL Arch. Biochem. Biophys. 245:287-291(1986).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: J16556; AAA18842.1; -
DR PIR: A05094; A05094.
DR HSSP: P01241; IHWG.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT CONFLICT 100 100 E -> Q (IN REF. 2).

FT CONFLICT 179 179 N -> D (IN REF. 2).
SQ SEQUENCE 217 AA; 24913 MW; 2C5180341EEC46D0 CRC64;

Query Match 94.9%; Score 645; DB 1; Length 217;
Best Local Similarity 97.0%; Pred. No. 6.9e-56;
Matches 128; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

2 FPTPLSRLEFDNMLRAHRLHQLAFDPTVOEFEEAYIPKQKYSFLONPQTSLSFSES IPT 61
|||||
27 FPTPLSRLEFDNMLRAHRLHQLAFDPTVOEFEEAYIPKQKYSFLONPQTSLSFSES IPT 86

62 PSNRETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIYVGSADSNVYDLKLEEG 121
|||||
87 PSNRETOOKSNLELRISLLIQSWLEPVOFLRSVFANSIYVGSADSNVYDLKLEEG 146

122 IOTLMGRLEEGS 133
|||||
147 IOTLMGRLEEGS 158

RESULT 3
SOMA_CALYA STANDARD; PRT; 217 AA.
AC Q9GBB3;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHL.
OS Callithrix jacchus (Common marmoset).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callitrix.
OX NCBI_TaxID=9483;
RN
RP SEQUENCE FROM N.A.
RA Wallis O.C., Wallis M.;
RT "Cloning and characterisation of a putative growth hormone encoding
RT gene from the marmoset (Callithrix jacchus).";
RL Submitted (Aug-2000) to the EMBL/Genbank/DBD databases.
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: AJ297563; CAC03481.1; -
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24959 MW; E102151A12CE6192 CRC64;

Query Match 91.3%; Score 621; DB 1; Length 217;
Best Local Similarity 90.2%; Pred. No. 1.5e-53;
Matches 120; Conservative 8; Mismatches 5; Indels 0; Gaps 0;

2 FPTPLSRLEFDNMLRAHRLHQLAFDPTVOEFEEAYIPKQKYSFLONPQTSLSFSES IPT 61
|||||

Db 27 FPTPLSRLLDNAMLRHRLHQLAFPTYQEFEEAYIRPEKQKXSFIONPOTSLCSSESIP 86
 Qy 62 PSNNEEQOKSNLELRISILLIQSLFVQFLRSVFANSLYTGASDSNYDLKDEEG 121
 Db 87 PASKREYQOKSNLELRISILLIQSLFVQFLRSVFANSLLYGVSDVYEYKLDEEG 146
 Qy 122 IOTLMGRLEDGSP 134
 Db 147 IOTLMGRLEDGSP 159

RESULT 4

SOMA_SAIBB STANDARD; PRT: 217 AA.

AC P58343;
 DT 01-MAR-2002 (Rel. 41, Created)
 DT 01-MAR-2002 (Rel. 41, Last sequence update)
 DT 01-MAR-2002 (Rel. 41, Last annotation update)
 DE Somatotropin precursor (Growth hormone).
 GN GH1.
 OS Saimiri boliviensis boliviensis (Bolivian squirrel monkey).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Saimiri.
 RX NCBI_TaxID=99432;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=21265430; PubMed=11371582;
 RA Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;
 RT "Epistodic evolution of growth hormone in primates and emergence of the
 RT species specificity of human growth hormone receptor.";
 RL Mol. Biol. Evol. 18:945-953(2001).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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 CC -----
 CC EMBL: AF339060; AAK62287.1; -
 DR PROSITE: PS00286; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26
 FT CHAIN 27 217 BY SIMILARITY.
 FT DISULFID 79 191 SOMATOTROPIN.
 FT DISULFID 208 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24864 MW; 95152899925C29F7 CRC64;

Query Match

Best Local Similarity 89.4%; Score 608; DB 1; Length 217;
 Matches 118; Conservative 8; Mismatches 7; Indels 0; Gaps 0;

Qy 2 FPTPLSRLLDNAMLRHRLHQLAFPTYQEFEEAYIRPEKQKXSFIONPOTSLCSSESIP 61
 Db 27 FPTPLSRLLDNAMLRHRLHQLAFPTYQEFEEAYIRPEKQKXSFIONPOTSLCSSESIP 86
 Qy 62 PSNNEEQOKSNLELRISILLIQSLFVQFLRSVFANSLYTGASDSNYDLKDEEG 121
 Db 87 PASKREYQOKSNLELRISILLIQSLFVQFLRSVFANSLLYGVSDVYEYKLDEEG 146
 Qy 122 IOTLMGRLEDGSP 134
 Db 147 IOTLMGRLEDGSP 159

RESULT 5

SOMV_HUMAN STANDARD; PRT: 217 AA.
 ID SOMV_HUMAN
 AC P01242;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 01-AUG-1991 (Rel. 19, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Growth hormone variant I precursor (GH-V) (Placenta-specific growth
 DE hormone).
 GN GH2.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 CC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
 RX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
 RA Gellinas R.E., Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 RT evolution.";
 RL Genomics 4:479-497(1989).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=88243769; PubMed=3379057;
 RA Cooke N.E., Ray J., Emery J.G., Liebhauer S.A.;
 RT "Two distinct species of human growth hormone-variant mRNA in the
 RT human placenta predict the expression of novel growth hormone
 RT proteins.";
 RL J. Biol. Chem. 263:9001-9006(1988).
 RN [3]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=83182010; PubMed=7169009;
 RA Seeburg P.H.;
 RT "The human growth hormone gene family: nucleotide sequences show
 RT recent divergence and predict a new polypeptide hormone.";
 RL DNA 1:239-249(1982).
 RN [4]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89024984; PubMed=2460050;
 RA Igout A., Scippo M.L., Franckenne F., Hennen G.;
 RT "Cloning and nucleotide sequence of placental hGH-V cDNA.";
 RL Arch. Int. Physiol. Biochim. 96:63-67(1988).
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED BY
 CC ALTERNATIVE SPLICING OF THE SAME GENE.
 CC -1- TISSUE SPECIFICITY: THIS PROTEIN SEEMS TO BE EXPRESSED IN THE
 CC PLACENTA.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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 CC -----
 CC EMBL: K00470; AAA98619.1; -
 DR EMBL: J03756; AAB59548.1; -
 DR EMBL: J03071; AAA2552.1; -
 DR EMBL: M38451; AAA35891.1; -
 DR PIR: A01511; SPHUV.
 DR PIR: B28072; B28072.
 DR PIR: D32435; D32435.
 DR HSSP: P01241; 1HWH.
 DR MIM: 139240; -
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00286; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Placenta; Signal; Glycoprotein; Alternative splicing.
 FT SIGNAL 1 26

FT CHAIN 27 217 GROWTH HORMONE VARIANT I.
 FT DISULFID 79 191 BY SIMILARITY.
 FT DISULFID 208 215 BY SIMILARITY.
 FT CARBOHYD 166 166 N-LINKED (GLCNAC. . .) (POTENTIAL).
 FT CONFLICT 35 35 L -> P (IN REF. 3).
 FT CONFLICT 109 109 T -> I (IN REF. 2 AND 4).
 SQ SEQUENCE 217 AA: 24987 MW: 40FE8620A5138D1C CRC64;

Query Match 87.9%; Score 598; DB 1; Length 217;
 Best Local Similarity 91.0%; Pred. No. 2,7e-51;
 Matches 121; Conservative 3; Mismatches 9; Indels 0; Gaps 0;

QY 2 FPTPLSRFLPDNMLRAHRLHOLAFDTYQEFEEAVYIPKEOKYSFLQNPQTSLSFSSESIP 61
 DB 27 FPTPLSRFLPDNMLRAHRLYQLAYDTYQEFEEAVYILKEOKYSFLQNPQTSLSFSSESIP 86
 QY 62 PSNREFTQOKSNLELRISLLIQSWLEPVQFLRSVFANSIVYGASDSNYYDLKDLLEG 121
 DB 87 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSIVYGASDSNYYRHILKDLLEG 146
 QY 122 IOTLMGRLEDGSP 134
 DB 147 IOTLMWRLEDGSP 159

RESULT 6
 SOMM_HUMAN STANDARD; PRT: 256 AA.
 ID SOMM_HUMAN
 AC P09587;
 DT 01-MAR-1989 (Rel. 10, Created)
 DT 01-MAR-1989 (Rel. 10, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Growth hormone variant II precursor (GH-V2).
 GN GH2.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
 RA Gellinas R.E., Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 RT evolution";
 RL Genomics 4:479-497(1989).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=88243769; PubMed=3379057;
 RA Cooke N.E., Ray J., Emery J.G., Liephaber S.A.;
 RT "Two distinct species of human growth hormone-variant mRNA in the
 RT human placenta predict the expression of novel growth hormone
 RT proteins";
 RL J. Biol. Chem. 263:9001-9006(1988).
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED BY
 CC -1- ALTERNATIVE SPLICING OF THE SAME GENE.
 CC -1- MISCELLANEOUS: THE C-TERMINAL REGION OF THIS PROTEIN IS DIFFERENT
 CC FROM THAT OF ALL OTHERS PROTEINS OF THIS FAMILY.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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 DR EMBL: J03756; AAB59547.1; -;
 DR PIR: A28072; A28072.
 DR HSSP: P01241; IH0W.

DR MIM: 139240; -;
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone_1.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; FALSE NEG.
 KW hormone; Placenta; signal; Alternative splicing.
 FT SIGNAL 1 26
 FT CHAIN 27 256 GROWTH HORMONE VARIANT II.
 FT CONFLICT 237 240 AEAG -> EAGR (IN REF. 2).
 SQ SEQUENCE 256 AA: 28778 MW: 4605AD39FD8C44FE CRC64;

Query Match 83.2%; Score 565.5; DB 1; Length 256;
 Best Local Similarity 87.3%; Pred. No. 4.8e-48;
 Matches 117; Conservative 4; Mismatches 12; Indels 1; Gaps 1;

QY 2 FPTPLSRFLPDNMLRAHRLHOLAFDTYQEFEEAVYIPKEOKYSFLQNPQTSLSFSSESIP 61
 DB 27 FPTPLSRFLPDNMLRAHRLYQLAYDTYQEFEEAVYILKEOKYSFLQNPQTSLSFSSESIP 86
 QY 62 PSNREFTQOKSNLELRISLLIQSWLEPVQFLRSVFANSIVYGASDSNYYDLKDLLEG 121
 DB 87 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSIVYGASDSNYYRHILKDLLEG 146
 QY 122 IOTLMG-RLEDGSP 134
 DB 147 IOTLMWVRVAGIP 160

RESULT 7
 PHL_HUMAN STANDARD; PRT: 217 AA.
 ID PHL_HUMAN
 AC P01243;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 01-APR-1988 (Rel. 07, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Lactogen precursor (Chorionmammotropin) (Chorionic somatomammotropin).
 GN CSH1 AND CSH3.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
 OX NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A. (GENE CSH1).
 RX MEDLINE=85030426; PubMed=6208192;
 RA Selby M.J., Barta A., Baxter J.D., Bell G.I., Eberhardt N.L.;
 RT "Analysis of a major human chorionic somatomammotropin gene. Evidence
 RT for two functional promoter elements";
 RL J. Biol. Chem. 259:13131-13138(1984).
 RN [2]
 RP SEQUENCE FROM N.A. (GENE CSH3).
 RX MEDLINE=87161235; PubMed=3030680;
 RA Hirt H., Krimelman J., Biribaum M.J., Chen E.Y., Seeburg P.H.,
 RA Eberhardt N.L., Barta A.;
 RT "The human growth hormone gene locus: structure, evolution, and
 RT allelic variations";
 RL DNA 6:59-70(1987).
 RN [3]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=83160916; PubMed=6300056;
 RA Barrera-Saldana H.A., Seeburg P.H., Saunders G.F.;
 RT "Two structurally different genes produce the same secreted human
 RT placental lactogen hormone";
 RL J. Biol. Chem. 258:3787-3793(1983).
 RN [4]
 RP SEQUENCE FROM N.A. (GENES CSH1 AND CSH3).
 RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E.,
 RA Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 RT evolution";
 RL Genomics 4:479-497(1989).
 RN [5]

RP SEQUENCE.
RX MEDLINE=63182010; PubMed=7169009;
RA Seeburg P.H.;
RT "The human growth hormone gene family: nucleotide sequences show
RT recent divergence and predict a new polypeptide hormone.";
RL DNA 1:239-249(1982).
RN
RP SEQUENCE OF 50-217 FROM N.A.
RX MEDLINE=78071761; PubMed=593368;
RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
RT "Construction and analysis of recombinant DNA for human chorionic
RT somatomammotropin.";
RL Nature 270:494-499(1977).
RN
RP SEQUENCE OF 27-217.
RX MEDLINE=73201971; PubMed=4712450;
RA Li C.H., Dixon J.S., Chung D.;
RT "Amino acid sequence of human chorionic somatomammotropin.";
RL Arch. Biochem. Biophys. 155:95-110(1973).
RN
RP SEQUENCE OF 27-117.
RX MEDLINE=72016313; PubMed=5286363;
RA Sherwood L.M., Handwerker S., McLaurin W.D., Lanner M.;
RT "Amino acid sequence of human placental lactogen.";
RL Nature New Biol. 233:59-61(1971).
RN
RP ERRATUM.
RA Sherwood L.M., Handwerker S., McLaurin W.D., Lanner M.;
RL Nature New Biol. 235:64-64(1972).
RN
RP INTERCHAIN DISULFIDE BONDS.
RX MEDLINE=79173081; PubMed=438159;
RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;
RT "Identification of the interchain disulfide bonds of dimeric human
RT placental lactogen.";
RL J. Biol. Chem. 254:3782-3787(1979).
RN
RP FUNCTION: SIMILAR TO THAT OF SOMATOTROPIN.
CC
CC SUBCELLULAR LOCATION: Secreted.
CC
CC MISCELLANEOUS: THE SEQUENCE OF CSH-1 IS SHOWN.
CC
CC SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC
CC EMBL: V00573; CAA23836.1; -;
DR EMBL: J00289; AAA98747.1; -;
DR EMBL: K02401; AAA52115.1; -;
DR EMBL: M15894; AAA52116.1; -;
DR EMBL: J03071; AAA52551.1; -;
DR EMBL: J00118; AAA98621.1; -;
DR PIR: A01512; LCHUC.
DR PIR: A26449; A26449.
DR PIR: C32435; C32435.
DR PIR: E32435; E32435.
DR HSSP: P01241; 1HWH.
DR MIM: 130200; -;
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KM Hormone; Placenta; Multigene family; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217 LACTOGEN.
FT DISULFID 79 191
FT DISULFID 208 215
FT DISULFID 208 215 INTERCHAIN (WITH C-215 IN A DIMER).
FT DISULFID 215 215 INTERCHAIN (WITH C-208 IN A DIMER).
FT

FT VARIANT 3 3 P -> A (IN CSH-3).
FT FT /FTID=VAR_007166.
FT VARIANT 104 105 IS -> L (IN CSH-3).
FT FT /FTID=VAR_007167.
FT CONFLICT 84 84 I -> T (IN REF. 8).
FT CONFLICT 95 95 MISSING (IN REF. 8).
FT CONFLICT 116 116 MISSING (IN REF. 8).
FT CONFLICT 134 136 SDD -> BBS (IN REF. 8).
SQ SEQUENCE 217 AA; 25020 MW; 235BDC7A713F431 CRC64;

Query Match 80.6%; Score 548; DB 1; Length 217;
Best Local Similarity 82.38; Pred. No. 2e-46; Mismatches 12; Indels 0; Gaps 0;
Matches 107; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

QY 4 TIPSRLFDNMLRANRLHQAEDTYOEFEAYIPREKQYSLQNPOTSLSPSESIPPS 63
DB 29 TYPISRLFDHMLQAHRAHQAIIDTYOEFETETYPIDQKYSFLHDSQTSFCFSIDIPPS 88
QY 64 NRETOQKSNLELLRISLLILQSLPEVQFLRSVFANSLVYGASDSNYDLKLEEGIQ 123
DB 89 NMEETQKSNLELLRISLLILQSLPEVQFLRSVFANSLVYGASDSNYDLKLEEGIQ 148
QY 124 TLMGRLEDGS 133
DB 149 TLMGRLEDGS 158

RESULT 8
SOMV_MACMU ID SOMV_MACMU STANDARD; PRT; 217 AA.
AC Q07370; Q28494;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Growth hormone variant I precursor (GH-V) (Placenta-specific growth
DE hormone).
DE
GN GH2.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_Taxid=9544;
RN [1]
RP SEQUENCE FROM N.A.
RA Golos T.G.;
RL Submitted (JAN-1994) to the EMBL/Genbank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=Placenta;
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomammotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC
CC SUBCELLULAR LOCATION: Secreted (By similarity).
CC
CC SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC
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CC
CC EMBL: U02293; AAA03391.1; -;
DR EMBL: L16555; AAA20180.1; -;
DR HSSP: P01241; 1HGU.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR

DR EMBL: S66299; AAB20368.1; -.
DR PIR: B49159; B49159.
DR HSSP: P01246; 1B5T.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PFO0103; hormone; 1.
DR PRINTS: PRO0836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
DR Hormone: Pituitary; Signal.
DR SIGNAL 1 26 BY SIMILARITY.

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Query Match: 64.9%; Score 441; DB 1; Length 190;
Best Local Similarity 66.9%; Pred. No. 4,5e-36;
Matches 89; Conservative 17; Mismatches 25; Indels 2; Gaps 2.

2 PPTPLSRFLDNNMLAAHLHQLADFTVOEPEANIPKQKYSFLQNPQISLSFSESIIP 61
|| : : : : : || : : : || : : : : : || : : || : : : : || : : || : : ||

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DB 1 PFAMPLSLFANAVLRAQHLEHLAADYKKEFERAYIPGORY-FLONASTGCFSEVLP 59
 QY 62 PSNRETOOKSNLELRSLILSIQSWLEPVQFLRSFVANSIYGASDSNVYDLKDLDEEG 121
 DB 60 PANKDEAQRSDVELLRSLILSIQSWLGPVQFLERAYANLVGTSD-RVYEKLKDLDEEG 118
 QY 122 IOTLMGRLEDDSP 134
 DB 119 IQALMRELEDDSP 131

RESULT 11
 SOMA_LOXAF STANDARD; PRT; 190 AA.
 ID SOMA_LOXAF
 AC P20392;
 DT 01-FEB-1991 (Rel. 17, Created)
 DT 01-FEB-1991 (Rel. 17, Last sequence update)
 DT 15-DEC-1998 (Rel. 37, Last annotation update)
 DE Somatotropin (growth hormone).
 GN GH1.
 OS *Loxodonta africana* (African elephant).
 OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Proboscidea; Elephantidae; Loxodonta.
 OX NCBI_TaxID=9785;
 RN [1]
 RP SEQUENCE.
 RA Hulmes J.D., Miedel M.C., Li C.H., Pan Y.C.E.;
 RT "Primary structure of elephant growth hormone."
 RL Int. J. Pept. Protein Res. 33:368-372(1988).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
 CC PIR: J0219; JK0219.
 DR HSSP: P01246; 1BST.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary.
 FT DISULFID 52 163 BY SIMILARITY.
 FT DISULFID 180 188 BY SIMILARITY.
 FT SEQUENCE 190 AA; 21761 MW; 05B860813DB741F2 CRC64;

Query Match 64.7% Score 440; DB 1; Length 190;
 Best Local Similarity 66.9%; Pred. No. 5.7e-36;
 Matches 89; Conservative 16; Mismatches 26; Indels 2; Gaps 2;
 QY 2 PFTITLSRLFDNAMLRAHRLHQLAFDYIOFEERAYIPKECKYSFLONPOTSLSFSESIP 61
 DB 1 PFAMPLSLFANAVLRAQHLEHLAADYKKEFERAYIPGORYS-IONQAACFSETIPA 59
 QY 62 PSNRETOOKSNLELRSLILSIQSWLEPVQFLRSFVANSIYGASDSNVYDLKDLDEEG 121
 DB 60 PANKDEAQRSDVELLRSLILSIQSWLGPVQFLERAYANLVGTSD-RVYEKLKDLDEEG 118
 QY 122 IOTLMGRLEDDSP 134
 DB 119 IQALMRELEDDSP 131

RESULT 12
 SOMA_CANFA STANDARD; PRT; 216 AA.
 ID SOMA_CANFA
 AC P33711; Q9TQ76;
 DT 01-FEB-1994 (Rel. 28, Created)
 DT 16-OCT-2001 (Rel. 40, Last sequence update)
 DT 16-OCT-2001 (Rel. 40, Last annotation update)
 DE Somatotropin precursor (growth hormone).
 GN GH1 OR GH.
 OS *Canis familiaris* (Dog).

OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 OX NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA MEDLINE-94266166; PubMed-8206387;
 RA Ascacio-Martinez J.A., Barrera-Saldana H.A.;
 RT "A dog growth hormone cDNA codes for a mature protein identical to
 RT pig growth hormone."
 RL Gene 143:277-280(1994).
 RN [2]
 RP SEQUENCE FROM N.A.
 RA van Leeuwen I.S., Teske E., van Garderen E., Ruteman G.R., Mol J.A.;
 RT "Extrapiutary growth hormone expression in the dog is initiated at
 RT the normal pituitary transcription start site in the mammary gland and
 RT at multiple upstream sites in lymphoid cells."
 RL submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.
 RN [3]
 RP SEQUENCE FROM N.A.
 RC TISSUE-Mammary gland;
 RX MEDLINE-9937113; PubMed-10411306;
 RA Laninga-van Leeuwen I.S., Oudshoorn M., Mol J.A.;
 RT "Canine mammary growth hormone gene transcription initiates at the
 RT pituitary-specific start site in the absence of Pit-1."
 RL Mol. Cell. Endocrinol. 150:121-128(1999).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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 CC -----
 CC EMBL: Z23067; CA80601.1; -;
 CC EMBL: 092533; AAF21502.1; -;
 CC EMBL: AF069071; AAD43366.1; -;
 CC PIR: S35790; S35790.
 DR HSSP: P01246; 1BST.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 KW Hormone; Pituitary; Signal.
 FT SIGNAL 1 26 BY SIMILARITY.
 FT CHAIN 27 216 SOMATOTROPIN.
 FT DISULFID 78 189 BY SIMILARITY.
 FT DISULFID 206 214 BY SIMILARITY.
 FT CONFLICT 4 4 S -> G (IN REF. 1).
 FT CONFLICT 7 7 N -> T (IN REF. 1).
 FT SEQUENCE 216 AA; 24468 MW; A8AD1D59F1DAED CRC64;

Query Match 64.7% Score 440; DB 1; Length 216;
 Best Local Similarity 66.9%; Pred. No. 6.7e-36;
 Matches 89; Conservative 16; Mismatches 26; Indels 2; Gaps 2;
 QY 2 PFTITLSRLFDNAMLRAHRLHQLAFDYIOFEERAYIPKECKYSFLONPOTSLSFSESIP 61
 DB 27 PFAMPLSLFANAVLRAQHLEHLAADYKKEFERAYIPGORYS-IONQAACFSETIPA 85
 QY 62 PSNRETOOKSNLELRSLILSIQSWLEPVQFLRSFVANSIYGASDSNVYDLKDLDEEG 121
 DB 86 PANKDEAQRSDVELLRSLILSIQSWLGPVQFLERAYANLVGTSD-RVYEKLKDLDEEG 144
 QY 122 IOTLMGRLEDDSP 134
 DB 145 IQALMRELEDDSP 157

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RESULT 13
SOMA_FELCA STANDARD: PRT: 216 AA.
ID SOMA_FELCA
AC P46404:
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHL.
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX NCBI_TaxID=9685;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=pituitary;
RX MEDLINE=96194906; PubMed=8654953;
RA Warren W.C., Bentle K.A., Bogosian G.;
RT "Cloning of the cDNAs coding for cat growth hormone and prolactin.";
RL Gene 168:247-249(1996).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=pituitary;
RX MEDLINE=95369713; PubMed=7642118;
RA Castro-Peralta F., Barrera-Saldana H.A.;
RT "Cloning and sequencing of cDNA encoding the cat growth hormone.";
RL Gene 160:311-312(1995).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: U25973; AAA67294.1; -
DR EMBL: U13390; AAA96142.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone_1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; pituitary; signal.
FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 216 SOMATOTROPIN.
FT DISULFID 78 189 BY SIMILARITY.
FT DISULFID 206 214 BY SIMILARITY.
FT CONFLICT 7 7 N -> T (IN REF. 2).
FT CONFLICT 26 26 T -> A (IN REF. 2).
FT CONFLICT 159 159 G -> A (IN REF. 2).
FT CONFLICT 181 181 L -> P (IN REF. 2).
SQ SEQUENCE 216 AA; 24454 MW; 05820239A7D292C6 CRC64;

Query Match 64.7%; Score 440; DB 1; Length 216;
Best Local Similarity 66.9%; Pred. No. 6.7e-36;
Matches 89; Conservative 16; Mismatches 26; Indels 2; Gaps 2;

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QY 122 IQTLMERLEDGSP 134
Db 145 IOALMRLEDGSP 157

RESULT 14
SOMA_PIG STANDARD: PRT: 216 AA.
ID SOMA_PIG
AC P01248; Q28958; Q29045;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-MAR-1989 (Rel. 10, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHL.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=88030700; PubMed=3666458;
RA Vize P.D., Wells J.R.E.;
RT "Isolation and characterization of the porcine growth hormone gene.";
RL Gene 55:339-344(1987).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=90212663; PubMed=2182128;
RA Kato Y., Shimokawa N., Kato T., Hirai T., Yoshihama K., Kawai H.,
RA Hattori M.A., Ezashi T., Shimogori Y., Wakabayashi K.;
RT "Porcine growth hormone: molecular cloning of cDNA and expression in
RT bacterial and mammalian cells.";
RL Biochim. Biophys. Acta 1048:290-293(1990).
RN [3]
RP SEQUENCE FROM N.A.
RC TISSUE=pituitary;
RX MEDLINE=91355590; PubMed=2491309;
RA Qi S.Z., Wang X.Z., Zhou S.W., Jia F., Wang H.Y., Xia L.T., Li J.;
RT "Sequencing of porcine growth hormone cDNA.";
RL Chin. J. Biotechnol. 5:35-39(1989).
RN [4]
RP SEQUENCE OF 27-30 AND 149-216.
RX MEDLINE=70293161; PubMed=4918150;
RA Mills J.B., Howard S.C., Scapa S., Waltheim A.E.;
RT "Cyanogen bromide cleavage and partial amino acid sequence of porcine
RT growth hormone.";
RL J. Biol. Chem. 245:3407-3415(1970).
RN [5]
RP SEQUENCE OF 7-216 FROM N.A.
RX MEDLINE=63209123; PubMed=6303731;
RA Seeburg P.H., Sias S., Adelman J., De Boer H.A., Hayflick J.,
RA Jhurani P., Goeddel D.V., Heyneker H.L.;
RT "Efficient bacterial expression of bovine and porcine growth
RT hormones.";
RL DNA 2:37-45(1983).
RN [6]
RP SEQUENCE OF 97-158 FROM N.A.
RX MEDLINE=94154153; PubMed=1343826;
RA Yang Q., Zhu B., Zhou S., Qi S.;
RT "Cloning and partial sequencing of the porcine growth hormone (pGH)
RT gene from pituitary gland.";
RL Chin. J. Biotechnol. 8:227-233(1992).
RN [7]
RP SEQUENCE OF 5-57 FROM N.A.
RA Jiang Z.H., Rottmann O.J., Pilchner F.;
RL Submitted (NOV-1996) to the EMBL/Genbank/DBJ databases.
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -

```

RESULT	15		
SOMA_MOUSE			
ID	SOMA_MOUSE	STANDARD:	PRT: 216 AA.
AC	P06880:		
DT	01-JAN-1988 (rel. 06, Created)		
DT	01-JAN-1988 (rel. 06, Last sequence update)		
DT	15-JUL-1998 (rel. 36, Last annotation update)		
DE	Somatotropin precursor (Growth hormone).		
GN	GHI OR GH.		
OS	Mus musculus (Mouse).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.		
OX	NCBI_TaxID=10090;		
RN	[1]		
RN	SEQUENCE FROM N.A.		
RP	MEDLINE=85261358; PubMed=2991252;		
RX	Linzer D.I.H., Talamantes F.;		
RT	"Nucleotide sequence of mouse prolactin and growth hormone mRNAs and		
RT	expression of these mRNAs during pregnancy.";		
RL	J Biol. Chem. 260:9574-9579(1985).		
RN	[2]		

Search completed: September 25, 2002, 09:59:52
Job time: 166 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:57:01 ; Search time 42.97 Seconds

(without alignments)
539.477 Million cell updates/sec

Title: US-09-819-094-24

Perfect score: 680
Sequence: 1 MEPTIPLSRLFDNMLRAHR.....LKDEBGIQTLMGRLEDSGP 134

Scoring table: BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%
Listing first 45 summaries

Database :

1: SPREMBL_19:*
2: SP_archaea:*
3: SP_bacteria:*
4: SP_fungi:*
5: SP_human:*
6: SP_invertebrate:*
7: SP_mammal:*
8: SP_mhc:*
9: SP_organelle:*
10: SP_plant:*
11: SP_rodent:*
12: SP_virus:*
13: SP Vertebrate:*
14: SP Unclassified:*
15: SP_Virus:*
16: SP_Bacteriap:*
17: SP_Archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	664	97.6	217	4	Q16631
2	570	83.8	245	4	Q14644
3	558	82.1	217	6	Q07369
4	550	80.9	212	6	Q07368
5	550	80.9	217	6	Q07367
6	548	80.6	217	4	Q14407
7	517.5	76.1	202	4	Q14643
8	470	66.1	171	4	Q9UN5
9	452	66.5	167	4	P78451
10	448	65.9	179	4	P78451
11	434	63.8	216	11	Q70615
12	433	63.7	216	11	Q9R2C3
13	433	63.7	216	11	Q9R2C3
14	423	62.2	190	11	Q9JMG4
15	419	61.6	192	6	Q9TU21
16	419	61.6	217	6	Q28957

17	418	61.5	192	6	Q9TQW9	Q9TQW9	bos indicus
18	417	61.3	204	6	Q95205	Q95205	ovis aries
19	412	60.6	217	6	Q9BEC0	Q9BEC0	traguus ja
20	412	60.6	217	6	Q9BEB9	Q9BEB9	tragulus ja
21	404	59.4	143	6	Q95240	Q95240	canis famli
22	404	59.4	178	6	Q95M6	Q95M6	taurus syr
23	395	58.1	178	6	Q95MJ5	Q95MJ5	taurus ban
24	390	57.4	199	4	Q14406	Q14406	homo sapien
25	371	54.6	145	6	Q9BDR4	Q9BDR4	galago cras
26	366.5	53.9	218	13	Q9PU72	Q9PU72	cyonops pyrr
27	339	49.9	195	13	Q91386	Q91386	amia calva
28	273.5	40.2	110	6	Q9N265	Q9N265	bos taurus
29	216	31.8	187	13	Q9BSR8	Q9BSR8	megaloBrama
30	216	31.8	188	13	Q98T74	Q98T74	megaloBrama
31	216	31.8	188	13	Q90283	Q90283	carassius a
32	216	31.8	210	13	Q90201	Q90201	mylopharyng
33	215	31.6	210	13	Q91056	Q91056	hypophthalm
34	211	31.0	188	13	Q90W27	Q90W27	carassius a
35	211	31.0	188	13	Q90W26	Q90W26	carassius a
36	210	30.9	188	13	Q98SR7	Q98SR7	cyprinus ca
37	201.5	29.6	120	6	Q9TSG0	Q9TSG0	ovis aries
38	199.5	29.3	140	13	Q90WE4	Q90WE4	gallus gall
39	193	28.4	210	13	Q90W30	Q90W30	clitrus m
40	193	28.4	211	13	Q9W798	Q9W798	catia catia
41	192	28.2	210	13	Q90W77	Q90W77	catia catia
42	161	23.7	45	6	Q9TGF9	Q9TGF9	equus asies
43	159.5	23.5	52	6	Q9TV91	Q9TV91	equus cabal
44	150	22.1	210	13	Q91160	Q91160	oncorhynch
45	145	21.3	207	13	Q9PSN4	Q9PSN4	sparus aura

ALIGNMENTS

RESULT 1
ID 016631 PRELIMINARY: PRT: 217 AA.
AC 016631; Q14405; (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE GROWTH HORMONE.
OC Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=82014939; PubMed=6269091;
RA Denoto F.M., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=84057143; PubMed=6357679;
RA Adelman J.P., Hayflick J.S., Vasser M., Seeburg P.H.;
RT "In vitro deletion mutagenesis for bacterial production of the
RT 20,000-dalton form of human pituitary growth hormone.";
RL DNA 2:183-193(1983).
DR EMBL: V00520; CAA23779.1; -.
DR HSSP: P01241; IHGU.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00358; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 24803 MW; CCC4DB1150D908AC CRC64;

Query Match 97.6%; Score 664; DB 4; Length 217;
Best Local Similarity 98.5%; Pred. No. 2.8e-57;
Matches 131; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 2 PFTPLSLRFLDNAMLRARHLQQLAFDYYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 61
 DB 27 PFTPLSLRFLDNAMLRARHLQQLAFDYYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 86
 QY 62 PSNRETOOKSNLELLRSLILSIOSWLEPVOFLRSVANSYVYGASDSNNYDLKDLERG 121
 DB 87 PSNRETOOKSNLELLRSLILSIOSWLEPVOFLRSVANSYVYGASDSNNYDLKDLERG 146
 QY 122 QITLMGRLEDGSP 134
 DB 147 QITLMGRLEDGSP 159

RESULT 2
 ID 014644 PRELIMINARY; PRT; 245 AA.
 AC 014644.
 DT 01-JAN-1998 (TREMBLrel. 05, Created)
 DT 01-JAN-1998 (TREMBLrel. 05, Last sequence update)
 DE 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE PLACENTAL GROWTH HORMONE ISOFORM HGH-V3 PRECURSOR.
 GN HGH-V.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 OK NCBI_TaxID=9606;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=FULL-TERM PLACENTA;
 RX MEDLINE=98373737; PubMed=9709963;
 RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
 RA Carlsson L.M.S., Carlsson B.,
 RT "Cloning of two novel growth hormone transcripts expressed in human
 RT placenta."
 RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
 DR EMBL: AF006061; AAB71829.1;
 DR HSSP: P01241; 1A22.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 KW Signal.
 FT SIGNAL 1 26 POTENTIAL.
 SQ SEQUENCE 245 AA; 27101 MW; 14CC7F8CD75D91C8 CRC64;

Query Match 83.8%; Score 570; DB 4; Length 245;
 Best Local Similarity 91.3%; Pred. No. 5, 2e-48;
 Matches 115; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 2 PFTPLSLRFLDNAMLRARHLQQLAFDYYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 61
 DB 27 PFTPLSLRFLDNAMLRARHLQQLAFDYYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 86
 QY 62 PSNRETOOKSNLELLRSLILSIOSWLEPVOFLRSVANSYVYGASDSNNYDLKDLERG 121
 DB 87 PSNRETOOKSNLELLRSLILSIOSWLEPVOFLRSVANSYVYGASDSNNYDLKDLERG 146
 QY 122 QITLMGRLEDGSP 134
 DB 147 QITLMGRLEDGSP 159

RESULT 3
 ID 007369 PRELIMINARY; PRT; 217 AA.
 AC 007369.
 DT 01-NOV-1996 (TREMBLrel. 01, Created)
 DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
 DE 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE SOMATOTROPIN 3 PRECURSOR (GROWTH HORMONE 3).
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
 OC Cercopithecoidea; Macaca.
 OK NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=PLACENTA;
 RX MEDLINE=94008724; PubMed=8404617;
 RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
 RT "Cloning of four growth hormone/chorionic somatomotropin-related
 RT complementary deoxyribonucleic acids differentially expressed during
 RT pregnancy in the rhesus monkey placenta."
 RL Endocrinology 133:1744-1752(1993).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.
 CC -1- SUBCELLULAR LOCATION: SECRETED.
 CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
 DR EMBL: L16554; AAI18841.1; -.
 DR HSSP: P01241; 1A21.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
 KW pituitary; Hormone; Signal.
 FT SIGNAL 1 2
 FT CHAIN 1 217 SOMATOTROPIN 3.
 FT DISULEID 79 191 BY SIMILARITY.
 FT DISULEID 208 215 BY SIMILARITY.
 SQ SEQUENCE 217 AA; 24874 MW; F1B6AFDBBA1B185 CRC64;

Query Match 82.1%; Score 558; DB 6; Length 217;
 Best Local Similarity 81.1%; Pred. No. 6, 7e-47;
 Matches 107; Conservative 13; Mismatches 12; Indels 0; Gaps 0;

QY 3 PFTPLSLRFLDNAMLRARHLQQLAFDYYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 62
 DB 28 PFTPLSLRFLDNAMLRARHLQQLAFDYYQEFEEAYIPKEOKYSFLONPQTSLSFSESIP 87
 QY 63 PSNRETOOKSNLELLRSLILSIOSWLEPVOFLRSVANSYVYGASDSNNYDLKDLERG 122
 DB 88 PSNRETOOKSNLELLRSLILSIOSWLEPVOFLRSVANSYVYGASDSNNYDLKDLERG 147
 QY 123 QITLMGRLEDGSP 134
 DB 148 QITLMGRLEDGSP 159

RESULT 4
 ID 007368 PRELIMINARY; PRT; 212 AA.
 AC 007368.
 DT 01-NOV-1996 (TREMBLrel. 01, Created)
 DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
 DE 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE SOMATOTROPIN 2 PRECURSOR (GROWTH HORMONE 2) (FRAGMENT).
 OS Macaca mulatta (Rhesus macaque).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
 OC Cercopithecoidea; Macaca.
 OK NCBI_TaxID=9544;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=PLACENTA;
 RX MEDLINE=94008724; PubMed=8404617;
 RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
 RT "Cloning of four growth hormone/chorionic somatomotropin-related
 RT complementary deoxyribonucleic acids differentially expressed during
 RT pregnancy in the rhesus monkey placenta."
 RL Endocrinology 133:1744-1752(1993).
 CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CC CONTROL.
 CC -1- SUBCELLULAR LOCATION: SECRETED.


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CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL: U16553; AAA18840.1; -.
DR HSSP: P01241; IAXI.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Pituitary; Hormone; Signal.
FT SIGNAL 1
FT NON_TER 1
FT CHAIN ? 212 SOMATOTROPIN 2.
FT DISULEID 74 186 BY SIMILARITY.
FT DISULEID 203 210 BY SIMILARITY.
SQ SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;

Query Match 80.9%; Score 550; DB 6; Length 212;
Best Local Similarity 79.5%; Pred. No. 3.9e-46;
Matches 105; Conservative 17; Mismatches 10; Indels 0; Gaps 0;

QY 3 PTPLSRLFDNAMIARHLHQLAFDYYOEFEAYIPKEOKYSFLQNPQTSLSFSSESITPP 62
D 23 PSYPLSLRFLPHAMIQARHLHQLAFDYYOEFEAYIPKEKHSIMENPQASFCFADSIPTP 82
DB 63 SNRETOQKSNLELRISILLIQSWLEPVQFLRSVANSIYVGASDSNVYDLKDLDEGI 122
DB 83 SNLETOQKSNLELRISILLIQSWLEPVQFLSVFANNLLHHTSDSDVHDLKDLDEGI 142
QY 123 QTLGRLEDCSP 134
DB 143 ETLWMRLDGIIP 154

RESULT 5
Q07367 PRELIMINARY; PRT; 217 AA.
ID 007367;
AC 007367;
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)
DE SOMATOTROPIN 1 PRECURSOR (GROWTH HORMONE 1).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheciidae;
OC Cercopitheciinae; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: SECRETED.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL: U16552; AAA18839.1; -.
DR HSSP: P01241; IAXI.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Pituitary; Hormone; Signal.
FT SIGNAL 1
FT CHAIN ? 217 SOMATOTROPIN 1.
FT DISULEID 79 191 BY SIMILARITY.
FT DISULEID 208 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24942 MW; FF5AA8915131F2BC CRC64;

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Query Match 80.9%; Score 550; DB 6; Length 217;
Best Local Similarity 79.5%; Pred. No. 4e-46;
Matches 105; Conservative 17; Mismatches 10; Indels 0; Gaps 0;

QY 3 PTPLSRLFDNAMIARHLHQLAFDYYOEFEAYIPKEOKYSFLQNPQTSLSFSSESITPP 62
D 28 PSYPLSLRFLPHAMIQARHLHQLAFDYYOEFEAYIPKEKHSIMENPQASFCFADSIPTP 87
DB 63 SNRETOQKSNLELRISILLIQSWLEPVQFLRSVANSIYVGASDSNVYDLKDLDEGI 122
DB 88 SNLETOQKSNLELRISILLIQSWLEPVQFLSVFANNLLHHTSDSDVHDLKDLDEGI 147
QY 123 QTLGRLEDCSP 134
DB 148 ETLWMRLDGIIP 159

RESULT 6
Q14407 PRELIMINARY; PRT; 217 AA.
ID 014407;
AC 014407;
DT 01-NOV-1996 (TREMBlrel. 01, Created)
DT 01-NOV-1996 (TREMBlrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)
DE CHORIONIC SOMATOMAMOTROPIN CS-2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=89307277; PubMed=2744760;
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
RA Seeburg P.H.;
RT "The human growth hormone locus: nucleotide sequence, biology, and
RT evolution.";
RL Genomics 4:479-497(1989).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=91102558; PubMed=1980158;
RA Vnencak-Jones C.L., Phillips J.A. III.;
RT "Hot spots for growth hormone gene deletions in homologous regions
RT outside of Alu repeats.";
RL Science 250:1745-1748(1990).
DR EMBL: J03071; AAA52553.1; -.
DR HSSP: P01241; IAX2.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 24994 MW; 39FAACDD86B2E951 CRC64;

Query Match 80.6%; Score 548; DB 4; Length 217;
Best Local Similarity 82.3%; Pred. No. 6.3e-46;
Matches 107; Conservative 11; Mismatches 12; Indels 0; Gaps 0;

QY 4 TTPLSRLFDNAMIARHLHQLAFDYYOEFEAYIPKEOKYSFLQNPQTSLSFSSESITPP 63
D 29 TVPLSLRFLPHAMIQARHLHQLAFDYYOEFEAYIPKDKYSTLSHSQSFCSFSDSIPTP 88
DB 89 NMETQOKSNLELRISILLIQSWLEPVQFLRSVANSIYVGASDSNVYDLKDLDEGIQ 148
QY 64 NRETOQKSNLELRISILLIQSWLEPVQFLRSVANSIYVGASDSNVYDLKDLDEGIQ 123
DB 124 TLMGRLEDCS 133
DB 149 TLMGRLEDCS 158

RESULT 7
Q14643

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ID 014643 PRELIMINARY; PRT; 202 AA.
AC 014643;
DT 01-JAN-1998 (Tremblrel. 05, Created)
DT 01-JAN-1998 (Tremblrel. 05, last sequence update)
DE 01-DEC-2001 (Tremblrel. 19, last annotation update)
DE PLACENTAL GROWTH HORMONE 20KDA ISOFORM PRECURSOR.
GN HGH-V.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=FULL-TERM PLACENTA;
RX MEDLINE=98373737; PubMed=9709963;
RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RT Carlsson L.M.S., Carlsson B.;
RT "Cloning of two novel growth hormone transcripts expressed in human
RT placenta.";
RT J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
DR EMBL: AF006060; AAB71828.1; -.
DR HSSP: P01241; 1A22.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 2.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KM SIGNAL.
FT SIGNAL.
SQ SEQUENCE 202 AA; 23128 MW; 38B64D011A9197C6 CRC64;

Query Match 76.1%; Score 517.5; DB 4; Length 202;
Best Local Similarity 81.2%; Pred. No. 5.6e-43;
Matches 108; Conservative 3; Mismatches 7; Indels 15; Gaps 1;

QY 2 PFTPLSLRFDNAMLRAHRLHQLAFDTYQEFEEAVYIPKEOKYSFLONPQTSLSSESIP 61
DB 27 PFTPLSLRFDNAMLRAHRLHQLAFDTYQEFEEAVYIPKEOKYSFLONPQTSLSSESIP 71
QY 62 PSNRETOOKSNLELRISLLIOSMLEPVOFLRSVFANSLVGASDSNVYDLKRLDEG 121
DB 72 PSNRETOOKSNLELRISLLIOSMLEPVOFLRSVFANSLVGASDSNVYDLKRLDEG 131
QY 122 IOTLMGRLEDGSP 134
DB 132 IOTLMGRLEDGSP 144

RESULT 8
QYUNL5 PRELIMINARY; PRT; 171 AA.
AC QYUNL5;
DT 01-MAY-2000 (Tremblrel. 13, Created)
DT 01-MAY-2000 (Tremblrel. 13, last sequence update)
DE 01-DEC-2001 (Tremblrel. 19, last annotation update)
DE GROWTH HORMONE SPLICE VARIANT.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PIUTARY;
RA Song H., Peng Y., Dai M., Huang Q., Mao Y., Zhang Q., Mao M., Fu G.,
RT Luo M., Chen J., Hu R.;
RT "Human growth hormone variant splicing gene.";
RT Submitted (DEC-1998) to the EMBL/Genbank/DBJ databases.
DR EMBL: AF110644; AAD48584.1; -.
DR HSSP: P01241; 1A21.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 2.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PRINTS: PR00836; SOMATOTROPIN.

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DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 171 AA; 19801 MW; 9FA9013991FA9F28 CRC64;

Query Match 69.1%; Score 470; DB 4; Length 171;
Best Local Similarity 70.3%; Pred. No. 2.1e-38;
Matches 97; Conservative 9; Mismatches 12; Indels 20; Gaps 3;

QY 2 PFTPLSLRFDNAMLRAHRLHQLAFDTYQEFEEAVYIPKEOKYSFLONPQTSLSSESIP 61
DB 27 PFTPLSLRFDNAMLRAHRLHQLAFDTYQEFEEAVYIPKEOKYSFLONPQTSLSSESIP 86
QY 62 PSNRETOOKSNLELRISLLIOSMLEPVOFLRSVFANSLVGASDSNVYDLKRLDEG 110
DB 87 PSNRETOOKSNLELRISLLIOSMLEPVOFLRSVFANSLVGASDSNVYDLKRLDEG 140
QY 111 --VYDLKRLDEGIQTL 126
DB 141 GLYCFRRDMOK-VETFL 157

RESULT 9
QYUNL5 PRELIMINARY; PRT; 167 AA.
AC P78451;
DT 01-MAY-1997 (Tremblrel. 03, Created)
DT 01-MAY-1997 (Tremblrel. 03, last sequence update)
DE 01-DEC-2001 (Tremblrel. 19, last annotation update)
DE SOMATOMAMOTROPIN (CHORIONIC SOMATOMAMOTROPIN) (HCS) (FRAGMENT).
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC MEDLINE=78071761; PubMed=593368;
RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
RT "Construction and analysis of recombinant DNA for human chorionic
RT somatomamotrophin.";
RT Nature 270:494-499(1977).
RN [2]
RP SEQUENCE OF 110-167 FROM N.A.
RX MEDLINE=78160787; PubMed=611657;
RA Seeburg P.H., Shine J., Martial J.A., Ulrich A., Goodman H.M.,
RA Baxter J.D.;
RT "Nucleotide sequence of a human gene coding for a polypeptide
RT hormone.";
RL Trans. Assoc. Am. Physicians 90:109-116(1977).
DR EMBL: V00593; CA23840.1; -.
DR EMBL: M25118; AA35721.1; -.
DR HSSP: P01241; 1A22.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KM CHORION.
FT NON_TER.
SQ SEQUENCE 167 AA; 19586 MW; 6EC7829D3938E976 CRC64;

Query Match 66.5%; Score 452; DB 4; Length 167;
Best Local Similarity 83.2%; Pred. No. 1.2e-36;
Matches 89; Conservative 8; Mismatches 10; Indels 0; Gaps 0;

QY 27 DTYOEEFEAVYIPKEOKYSFLONPQTSLSSESIPPSNRETOOKSNLELRISLLIOS 86
DB 2 DTYOEEFEAVYIPKEOKYSFLONPQTSLSSESIPPSNRETOOKSNLELRISLLIOS 61
QY 87 WLEPQFLRSVFANSLVGASDSNVYDLKRLDEGIQTLKRLDEG 133
DB 62 WLEPQFLRSVFANSLVGASDSNVYDLKRLDEGIQTLKRLDEG 108

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RESULT 10
O9HBZ1 PRELIMINARY; PRT; 179 AA.
ID O9HBZ1;
AC O9HBZ1;
DT 01-MAR-2001 (TREMBlrel. 16, Created)
DT 01-MAR-2001 (TREMBlrel. 16, Last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)
DE GROWTH HORMONE VARIANT.
GN GHV.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PIUITARY;
RA Gu J., Huang Q., Li N., Xu S., Han Z., Fu G., Chen Z.;
RT "A novel gene expressed in human pituitary."
RL Submitted (SEP-1999) to the EMBL/Genbank/DBJ databases.
DR EMBL; AF185611; AAC09699.1; -.
DR HSSP; P01241; IAXI.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 2.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 179 AA; 20561 MW; 0E875A91BE0B9B7E CRC64;

Query Match 65.9%; Score 448; DB 4; Length 179;
Best Local Similarity 70.7%; Pred. No. 3,1e-36;
Matches 94; Conservative 0; Mismatches 1; Indels 38; Gaps 1;

OY 2 FPTPLSLFDNAMLRAHRLHQLADFTYOEFEAYIPKEOKYSFLQNPQTSLSFSESIP 61
DB 27 FPTPLSLFDNAMLRAHRLHQLADFTYOEFEAYIPKEOKYSFLQNPQTSLSFSESIP 86
OY 62 PSNRRETOOKSNLELRISLLIQSWLEPVOPFLRSVFANSLVYGASDSNVYDLKDEEG 121
DB 87 PSNRRETOOKSNLELRISLL----- 108
OY 122 IOTLMGRLEDEGS 134
DB 109 IOTLMGRLEDEGS 121

RESULT 11
O70615 PRELIMINARY; PRT; 216 AA.
ID O70615;
AC O70615;
DT 01-AUG-1998 (TREMBlrel. 07, Created)
DT 01-AUG-1998 (TREMBlrel. 07, Last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, Last annotation update)
DE GROWTH HORMONE PRECURSOR.
OS Spalax leucodon ehrenbergi (Ehrenberg's mole rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;
OC Spalax.
OX NCBI_TaxID=30637;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=99124645; PubMed=9924177;
RA Lioupis A., Nevo E., Wallis M.;
RT "Cloning and characterisation of the gene encoding mole rat (Spalax ehrenbergi) growth hormone."
RL J. Mol. Endocrinol. 22:29-36(1999).
DR EMBL; AJ005819; CA06716.1; -.
DR HSSP; P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.

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KM Signal. 1 26 POTENTIAL.
FT SIGNAL 27 216 GROWTH HORMONE.
SQ SEQUENCE 216 AA; 24627 MW; EA8B8A523BA0ADE CRC64;

Query Match 63.8%; Score 434; DB 11; Length 216;
Best Local Similarity 66.7%; Pred. No. 9,1e-35;
Matches 88; Conservative 16; Mismatches 26; Indels 2; Gaps 2;

OY 2 FPTPLSLFDNAMLRAHRLHQLADFTYOEFEAYIPKEOKYSFLQNPQTSLSFSESIP 61
DB 27 FPAPPLSLFANAVLAQHLHQLADTYKEFERAYIPGQRS-IQNAQAFCFSETIPA 85
OY 62 PSNRRETOOKSNLELRISLLIQSWLEPVOPFLRSVFANSLVYGASDSNVYDLKDEEG 121
DB 86 PTGKEAQRSDMKELLRFSLLIQSWLGVOPFLRSVFTNSLVFGTSD-RVFEKTKLDEEG 144
OY 122 IOTLMGRLEDEGS 133
DB 145 IQALMRELEDEGS 156

RESULT 12
O9RC23 PRELIMINARY; PRT; 216 AA.
ID O9RC23;
AC O9RC23;
DT 01-MAY-2000 (TREMBlrel. 13, Created)
DT 01-MAY-2000 (TREMBlrel. 13, Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, Last annotation update)
DE GROWTH HORMONE.
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RA Nguyen T.N.K., Liehaber S.A.;
RT "Mouse Growth Hormone Locus: Nucleotide Sequence and Phylogenetic
RL Analyses."
RT Submitted (AUG-1995) to the EMBL/Genbank/DBJ databases.
DR EMBL; U34362; AAC99988.1; -.
DR HSSP; P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam; PF00103; hormone; 1.
DR PRINTS; PR00836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1; 1.
DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 216 AA; 24682 MW; FC2A06DA02536B18 CRC64;

Query Match 63.7%; Score 433; DB 11; Length 216;
Best Local Similarity 64.7%; Pred. No. 1,1e-34;
Matches 86; Conservative 18; Mismatches 27; Indels 2; Gaps 2;

OY 2 FPTPLSLFDNAMLRAHRLHQLADFTYOEFEAYIPKEOKYSFLQNPQTSLSFSESIP 61
DB 27 FPAPPLSLFANAVLAQHLHQLADTYKELERAYIPGQRS-IQNAQAFCFSETIPA 85
OY 62 PSNRRETOOKSNLELRISLLIQSWLEPVOPFLRSVFANSLVYGASDSNVYDLKDEEG 121
DB 86 PTGKEAQRSDMKELLRFSLLIQSWLGVOPFLRSVFTNSLVFGTSD-RVFEKTKLDEEG 144
OY 122 IOTLMGRLEDEGS 134
DB 145 IQALMRELEDEGS 157

RESULT 13
O9JRM4 PRELIMINARY; PRT; 216 AA.
AC O9JRM4;
DT 01-OCT-2000 (TREMBlrel. 15, Created)

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DT 01-OCT-2000 (TREMBlrel. 15, last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, last annotation update)
DE GROWTH HORMONE PRECURSOR.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriocognathi; Cavidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE FROM N.A.
RA Odorico D.M., Fuller P.J., Herington A.C.;
RT "Cloning and sequence of guinea pig growth hormone (GH).";
RT Submitted (FEB-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF233853; AAF36409.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
KW Signal.
FT SIGNAL.
FT CHAIN.
SQ SEQUENCE 216 AA; 24822 MW; 4596BDE119B0BD3 CRC64;

Query Match 63.7%; Score 433; DB 11; Length 216;
Best Local Similarity 65.4%; Pred. No. 1.1e-34;
Matches 87; Conservative 17; Mismatches 27; Indels 2; Gaps 2;

OY 2 FPTPLSLRFDNAMLRAHLHQLAFPTYQFEFEAYIKKQKYSFLONPQTSLSFSSES IPT 61
DB 27 FPMPLSSSLFGNAVLRAQHLHQLADPTKFEFRTYIPKQKYS-ITHNTQAFCSFETIPA 85
OY 62 PSNRETOQKSNLELRISLLSIQSWLEPVQFLRSVFANSIYVGYASDSNVYDLKDLDEG 121
DB 86 PDKKEAQQKSDVLELHLSLLSIQSWLGPGVQFLSRVFTNSLVFGTSD-RVYEKLDLEEG 144
OY 122 IOTLMGRLEDGSP 134
DB 145 IQALMRELEDGTP 157
RESULT 14
O9JKG0
ID O9JKG0 PRELIMINARY; PRT; 190 AA.
AC O9JKG0;
DT 01-OCT-2000 (TREMBlrel. 15, Created)
DT 01-OCT-2000 (TREMBlrel. 15, last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19, last annotation update)
DE GROWTH HORMONE (FRAGMENT).
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriocognathi; Cavidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE FROM N.A.
RA MEDLINE-20231762; PubMed-10767558;
RA Adkins R.M., Vandenberg J., Li W.H.;
RT "Molecular evolution of growth hormone and receptor in the guinea-pig,
a mammal unresponsive to growth hormone.";
RT Gene 246:357-363(2000).
DR EMBL: AF238493; AAF67172.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
FT NON_TER
SQ SEQUENCE 190 AA; 21962 MW; 6A0394FC5E707BE8 CRC64;

Query Match 62.2%; Score 423; DB 11; Length 190;

Best Local Similarity 63.9%; Pred. No. 9.3e-34;
Matches 85; Conservative 17; Mismatches 29; Indels 2; Gaps 2;

OY 2 FPTPLSLRFDNAMLRAHLHQLAFPTYQFEFEAYIKKQKYSFLONPQTSLSFSSES IPT 61
DB 1 FPMPLSSSLFGNAVLRAQHLHQLADPTKFEFRTYIPKQKYS-ITHNTQAFCSFETIPA 59
OY 62 PSNRETOQKSNLELRISLLSIQSWLEPVQFLRSVFANSIYVGYASDSNVYDLKDLDEG 121
DB 60 PDKKEAQQKSDVLELHLSLLSIQSWLGPGVQFLSRVFTNSLVFGTSD-RVYEKLDLEEG 118
OY 122 IOTLMGRLEDGSP 134
DB 119 IQALMRELEDGTP 131

RESULT 15
O9TU21
ID O9TU21 PRELIMINARY; PRT; 192 AA.
AC O9TU21;
DT 01-MAY-2000 (TREMBlrel. 13, Created)
DT 01-MAY-2000 (TREMBlrel. 13, last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17, last annotation update)
DE GROWTH HORMONE.
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RA STRAIN-INDIAN BEETAL;
RA Mukhopadhyay U.K., Sahni G.;
RT "Indian goat growth hormone cDNA.";
RT Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF177287; AAF03130.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone.1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 192 AA; 21977 MW; A5A6977B607F31BA CRC64;

Query Match 61.6%; Score 419; DB 6; Length 192;
Best Local Similarity 64.7%; Pred. No. 2.3e-33;
Matches 86; Conservative 16; Mismatches 29; Indels 2; Gaps 2;

OY 2 FPTPLSLRFDNAMLRAHLHQLAFPTYQFEFEAYIKKQKYSFLONPQTSLSFSSES IPT 61
DB 3 FPMPLSSSLFGNAVLRAQHLHQLADPTKFEFRTYIPKQKYS-ITHNTQAFCSFETIPA 61
OY 62 PSNRETOQKSNLELRISLLSIQSWLEPVQFLRSVFANSIYVGYASDSNVYDLKDLDEG 121
DB 62 PDKKEAQQKSDVLELHLSLLSIQSWLGPGVQFLSRVFTNSLVFGTSD-RVYEKLDLEEG 120
OY 122 IOTLMGRLEDGSP 134
DB 121 IQALMRELEDGTP 133

Search completed: September 25, 2002, 09:59:30
Job time: 149 sec

Wed Sep 25 10:41:48 2002

us-09-819-094-24.ispt

Page 7

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:57:39 ; Search time 51.49 Seconds
(without alignments)
291.221 Million cell updates/sec

Title: US-09-819-094-30
Perfect score: 689
Sequence: 1 MFPIPLSRFLFDNMLRARR.....KDEEGIQITMWRLEDSGR 135

Scoring table:
BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 111073796 residues
Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	689	100.0	135	20	AAW92267
2	689	100.0	192	20	AAW92266
3	684	99.3	217	4	AAW92266
4	630	91.4	217	22	AAW92266
5	623	90.4	140	10	AAW92266
6	623	90.4	192	10	AAW92266
7	623	90.4	192	20	AAW92266
8	623	90.4	261	10	AAW92266
9	623	90.4	262	7	AAW92266
10	623	90.4	262	12	AAW92266
11	620	90.0	144	11	AAW92266

12	618	89.7	138	9	AAW92267
13	618	89.7	191	20	AAW92267
14	618	89.7	191	20	AAW92267
15	618	89.7	191	21	AAW92267
16	618	89.7	193	8	AAW92267
17	618	89.7	194	20	AAW92267
18	618	89.7	212	7	AAW92267
19	618	89.7	214	7	AAW92267
20	618	89.7	214	7	AAW92267
21	618	89.7	214	11	AAW92267
22	618	89.7	214	18	AAW92267
23	618	89.7	214	20	AAW92267
24	618	89.7	214	21	AAW92267
25	618	89.7	214	21	AAW92267
26	618	89.7	217	11	AAW92267
27	618	89.7	217	21	AAW92267
28	618	89.7	217	22	AAW92267
29	618	89.7	241	20	AAW92267
30	618	89.7	244	12	AAW92267
31	618	89.7	245	21	AAW92267
32	618	89.7	274	21	AAW92267
33	618	89.7	360	21	AAW92267
34	618	89.7	397	12	AAW92267
35	618	89.7	407	22	AAW92267
36	617	89.6	310	11	AAW92267
37	613	89.0	191	13	AAW92267
38	613	89.0	191	13	AAW92267
39	613	89.0	191	13	AAW92267
40	613	89.0	191	13	AAW92267
41	613	89.0	191	13	AAW92267
42	613	89.0	191	13	AAW92267
43	613	89.0	191	13	AAW92267
44	613	89.0	191	13	AAW92267
45	613	89.0	191	13	AAW92267

ALIGNMENTS

RESULT	ID	AAW92267	standard; Protein: 135 AA.
AC	AAW92267		
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DT	08-JUN-1999	(first entry)	
XX			
DE			
XX			
KW	Human anti-angiogenic peptide 16k hGH-V Met-1Arg134.		
KW	Human: anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis; growth hormone; hGH; hGH-V; capillary endothelial cell proliferation; placental vasculature; pregnancy; treatment; angiogenic disease; tumour; inhibitor; malignant; angiodioma; arteriovenous malformation; arthritis; atherosclerotic plaques; corneal graft neovascularisation; wound healing; proliferative retinopathy; macular degeneration; trachoma; granuloma; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome; psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion; ulcer; leukaemia; reproductive disorder; contraceptive agent; gene therapy; pre-eclampsia; intrauterine growth retardation; placental dysfunction.		
KW			
KW			
OS	Homo sapiens.		
XX			
PN	W09851323-A1.		
XX			
PD	19-NOV-1998.		
XX			
PF	12-MAY-1998; 98WO-US09691.		
XX			
PR	13-MAY-1997; 97US-0046394.		
XX			
PA	(REGC) UNIV CALIFORNIA.		
XX			

Sequence of protei	
Primary amino acid	
Natural human 22KD	
Human growth hormo	
Met-Asp-human grow	
Recombinant human	
Sequence of Ap sig	
Sequence of Escher	
Sequence of Escher	
Human growth hormo	
Synthetic human gr	
Human growth hormo	
Human growth hormo	
Human growth hormo	
Human growth hormo	
Secretory cell pro	
Secretory cell lin	
Fusion of killer t	
Plasmid pow885 hum	
MWsp-MWmp20-(His	
Human growth hormo	
Human growth hormo	
Plasmid pow360 enc	
Human growth hormo	
Fusion protein of	
Mature human growt	
Mature human growt	
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hGH variant #2 - 1	
hGH variant #3 - 1	
hGH variant #4 - 1	
hGH variant #5 - 1	
hGH variant #6 - 1	
hGH variant #7 - 1	

PI	MattiaiaUA, Struman I, Taylor R, Weiner RI;
XX	WPI: 1999-045192/04.
DR	N-PSDB; MAX01711.
XX	New anti-angiogenic peptides - comprise N-terminal fragments of
PT	human placental lactogen, human growth hormone, growth hormone
PT	variant or human prolactin
XX	
PS	Claim 5; Page 52; 87pp; English.
XX	
CC	This invention describes novel human anti-angiogenic peptides derived
CC	from 10 to 150 consecutive amino acids selected from the N-terminal end
CC	of human placental lactogen (hPL), human growth hormone (hGH), growth
CC	hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
CC	capillary endothelial cell proliferation and organisation (ii) inhibit
CC	angiogenesis in chick chorioallantoic membrane and (iii) binds to at
CC	least one specific receptor which does not bind an intact full length
CC	hGH, hPL, prolactin or hGH-V. The invention also describes a method for
CC	diagnosing a probable abnormality of placental vasculatisation during
CC	pregnancy. The peptides can be used for treating an angiogenic disease in
CC	a subject, for inhibiting tumour formation or growth in a patient or for
CC	modulating vasculatisation of a patient's placenta. In particular, the
CC	peptides can be used for preventing or treating e.g. malignant tumours,
CC	angiofibroma, arteriovenous malformation, atherosclerotic plaques, corneal graft neovascularisation,
CC	arteritis, atherosclerotic plaques, corneal graft neovascularisation,
CC	delayed wound healing, proliferative retinopathy such as diabetic
CC	retinopathy, macular degeneration, granulations such as those occurring
CC	in haemophilic joints, inappropriate vasculatisation in wound healing
CC	such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
CC	tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
CC	pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
CC	Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
CC	leukaemia, and reproductive disorders such as follicular and luteal cysts
CC	and choriorcarioma. They can also be used as contraceptive agents. DNA
CC	encoding the peptides can be used in gene therapy. The measurement of
CC	abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
CC	can be used in assays for impairment of vascular development associated
CC	with pre-eclampsia, intrauterine growth retardation, and placental
CC	dysfunction.
XX	
XX	Sequence 135 AA;
SQ	
Query Match	100.0%; Score 689; DB 20; Length 135;
Best Local Similarity	100.0%; Pred. No. 6.3e-62;
Matches 135; Conservative	0; Mismatches 0; Indels 0; Gaps 0;
QY	1 MFPTPLSRLEDNMLRRRLRYQLAYDYIOEFEEAYIIKEQKYSFLONQISLCSSESIP 60
Db	1 mftptplsrltdnamlrrrrlyqlaydyqgefeyayllkeqkysflqpqtstlcsfesp 60
QY	61 TFSNVKTRQOKSNLELISILLTOSWLEPVLASVANSIYVQASDSNVYRHKLDEE 120
Db	61 tpsnvtkrqoksnlelltislillqswlepvqlrsvtanslvvgasdsnvyrhikldee 120
QY	121 GIQTLMWRLDEGSPR 135
Db	121 gtlqlmwrldegsp 135
RESULT 2	
AAW92266	AAW92266 standard; Protein; 192 AA.
AC	AAW92266;
XX	
DT	08-JUN-1999 (first entry)
XX	
DE	Human anti-angiogenic peptide hGH-V Met-1Phel91.
XX	
XX	Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis;
KW	growth hormone; hGH; hGH-V; capillary endothelial cell proliferation;

KM Placental vascularisation; pregnancy; treatment; angiogenic disease;
 KM tumour; inhibitor; malignancy; angiofibroma; arteriovenous malformation;
 KM arthritis; atherosclerotic plaques; corneal graft neovascularisation;
 KM wound healing; proliferative retinopathy; macular degeneration; trachoma;
 KM granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome;
 KM psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion;
 KM ulcer; leukaemia; reproductive disorder; contraceptive agent;
 KM gene therapy; pre-eclampsia; intrauterine growth retardation;
 KM placental dysfunction.
 OS Homo sapiens.
 PN WO9651323-A1.
 XX
 XX
 XX PD 19-NOV-1998.
 XX
 XX PF 12-MAY-1998; 98WO-US09691.
 XX
 XX PR 13-MAY-1997; 97US-0046394.
 XX
 XX PA (REGC) UNIV CALIFORNIA.
 XX
 XX PA Martial JA, Struman I, Taylor R, Weiner RI;
 DR WPI: 1999-045192/04.
 XX
 XX DR N-PSDB; AAX01710.
 XX
 PT New anti-angiogenic peptides - comprise N-terminal fragments of
 PT human placental lactogen, human growth hormone, growth hormone
 PT variant or human prolactin
 PS
 PS Example 3; Page 51-52; 87pp; English.
 XX
 XX
 CC This invention describes novel human anti-angiogenic peptides derived
 CC from 10 to 150 consecutive amino acids selected from the N-terminal end
 CC of human placental lactogen (hPL), human growth hormone (hGH), growth
 CC hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit
 CC capillary endothelial cell proliferation and organisation (ii) inhibit
 CC angiogenesis in chick chorioallantoic membrane and (iii) binds to at
 CC least one specific receptor which does not bind an intact full length
 CC hGH, hPL, prolactin or hGH-V. The invention also describes a method for
 CC diagnosing a probable abnormality of placental vascularisation during
 CC pregnancy. The peptides can be used for treating an angiogenic disease in
 CC a subject, for inhibiting tumour formation or growth in a patient or for
 CC modulating vascularisation of a patient's placenta. In particular, the
 CC peptides can be used for preventing or treating e.g. malignant tumours,
 CC angiofibroma, arteriovenous malformation, arthritic such as rheumatoid
 CC arthritis, atherosclerotic plaques, corneal graft neovascularisation,
 CC delayed wound healing, proliferative retinopathy such as diabetic
 CC retinopathy, macular degeneration, granulations such as those occurring
 CC in haemophilic joints, inappropriate vascularisation in wound healing
 CC such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular
 CC tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis,
 CC pyogenic glaucoma, retrolental fibroplasia, scleroderma, solid tumours,
 CC Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,
 CC leukaemia, and reproductive disorders such as follicular and luteal cysts
 CC and choriocarcinoma. They can also be used as contraceptive agents. DNA
 CC encoding the peptides can be used in gene therapy. The measurement of
 CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL
 CC can be used in assays for impairment of vascular development associated
 CC with pre-eclampsia, intrauterine growth retardation, and placental
 CC dysfunction.
 XX
 XX
 S0 Sequence 192 AA;

Query Match 100.0%; Score 689; DB 20; Length 192;
 Best Local Similarity 100.0%; Pred. No. 9 7e-62;
 Matches 135; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

1 MFPTPLSRLEFDNAMLRRARRLYQLAYDTRVQEEFAYILKEQKYSLQNPQTSLCFSESIP 60
 1 MFPTPLSRLEFDNAMLRRARRLYQLAYDTRVQEEFAYILKEQKYSLQNPQTSLCFSESIP 60

Query Match 91.4%; Score 630; DB 22; Length 217;
 Best Local Similarity 94.8%; Pred. No. 1e-55;
 Matches 127; Conservative 1; Mismatches 6; Indels 0; Gaps 0;

QY 2 FPTPLSRFLDNAMLRARLYOLADYTOEFEEAYILKEQKYSFLONPOTSLCFSESIP 61
 |||||
 Db 27 fptplsrflfndamlrarhrlhqladfyqfeeaaylpkqkysflqnpqtslcfesesip 86
 QY 62 PSNVRVTKQOKSNLELRISLLIOSWLEPVLRSVPANSLVYGASDSNRYRHLKDLDEG 121
 |||||
 Db 87 psnvrvtqoksnlelrlsllioswlepvlrsvpanslvygadsnrydlikdlee 146
 QY 122 IQTLMWRLEDGSPR 135
 |||||
 Db 147 iqtlmgrledgspr 160

RESULT 5

AAP91041
 ID AAP91041 standard; protein; 140 AA.

XX AAP91041;
 AC 14-DEC-1989 (first entry).
 DT 14-DEC-1989 (first entry).
 DE Human growth hormone segment.
 XX
 KW Human growth hormone; fusion protein; thrombin;
 KM geriatric dementia; nervous disorders; human nerve factor.
 XX
 OS Homo sapiens (human).
 XX
 PA EP329175-A.
 XX
 PD 23-AUG-1989.
 XX
 PE 17-FEB-1989; 89EP-0102795.
 XX
 PR 19-FEB-1988; 88JP-0035042.
 XX
 PA ('TOXJ') TOSOH CORP.
 XX
 XX Ohtsuka E;
 PI
 XX
 DR WPI; 1989-243092/34.
 XX
 PT New human nerve growth factor gene encoding fusion protein
 PT - having cleavage site for thrombin, useful for treating geriatric
 PT dementia, etc.
 XX
 PS Disclosure; page 21; 38pp; English.
 XX
 CC Human growth hormone segment, used at the N-terminal of a fusion
 CC protein, which contains a thrombin recognition site, and human beta nerve
 CC growth factor (beta-NGF) at the C-terminal. Beta-NGF can be used to
 CC control geriatric dementia and other nervous disorders, and can be
 CC released from the fusion protein by incubation with thrombin (see
 CC AA90577-8, AAP91034, AAP91299).
 XX
 SO Sequence 140 AA;

Query Match 90.4%; Score 623; DB 10; Length 140;
 Best Local Similarity 92.6%; Pred. No. 3e-55;
 Matches 125; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 1 MFPTPLSRFLDNAMLRARLYOLADYTOEFEEAYILKEQKYSFLONPOTSLCFSESIP 60
 |||||
 Db 1 mfptplsrflfndamlrarhrlhqladfyqfeeaaylpkqkysflqnpqtslcfesesip 60
 QY 61 TPSNRVTKQOKSNLELRISLLIOSWLEPVLRSVPANSLVYGASDSNRYRHLKDLDE 120
 |||||
 Db 61 tpsnrvtkqoksnlelrlsllioswlepvlrsvpanslvygadsnrydlikdlee 120

QY 121 GIOTLMWRLEDGSPR 135
 |||||
 Db 121 giotlmgrledgspr 135

RESULT 6

AAP90129
 ID AAP90129 standard; protein; 192 AA.

XX AAP90129;
 AC 06-FEB-1996 (revised)
 DT 01-NOV-1989 (first entry)
 DE Human growth hormone.
 XX
 KW Human growth hormone; fusion protein; recombinant
 KM vector.
 XX
 OS Homo sapiens (human).
 XX
 PA JP01144981-A.
 XX
 PD 07-JUN-1989.
 XX
 PE 02-DEC-1987; 87JP-0304937.
 XX
 PR 02-DEC-1987; 87JP-0304937.
 XX
 PA (WAKU) WAKUNGA SEIYAKU KK.
 XX
 DR WPI; 1989-209284/29.
 XX
 PE N-PSDB; AAN90269.
 PT Recombinant vector contg. fusion protein - consisting of human
 PT growth hormone or deriv. ligated to foreign protein, for stability
 PT and high yield.
 XX
 PS Disclosure; Fig 1; 19pp; Japanese.
 XX
 CC The invention consists of a vector contg. a fusion protein which is
 CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.
 CC formed by substn. of Met-14 with Leu) and a foreign protein.
 CC stability of the vector in the host is greatly increased so the
 CC protein yield is higher.
 XX
 SO Sequence 192 AA;

Query Match 90.4%; Score 623; DB 10; Length 192;
 Best Local Similarity 92.6%; Pred. No. 4.5e-55;
 Matches 125; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 1 MFPTPLSRFLDNAMLRARLYOLADYTOEFEEAYILKEQKYSFLONPOTSLCFSESIP 60
 |||||
 Db 1 mfptplsrflfndamlrarhrlhqladfyqfeeaaylpkqkysflqnpqtslcfesesip 60
 QY 61 TPSNRVTKQOKSNLELRISLLIOSWLEPVLRSVPANSLVYGASDSNRYRHLKDLDE 120
 |||||
 Db 61 tpsnrvtkqoksnlelrlsllioswlepvlrsvpanslvygadsnrydlikdlee 120
 QY 121 GIOTLMWRLEDGSPR 135
 |||||
 Db 121 giotlmgrledgspr 135

RESULT 7

AAM92264
 ID AAM92264 standard; protein; 192 AA.

XX AAM92264;
 AC

Db 1 mfpitpislrlfdnamlrahrlhqlafdtgqfseayipkqkysflqnpqtslcfesesip 60
 QY 61 TPSNRVKTQOKSNLELRISLLIQSWLEPQVQLRISVFANSILYVGASDSNVYRHKLDEE 120
 Db 61 tpsnrvtqkqsnlelrlrlslilqlgswlepqvqlrsvfansllygsadsnvylkldee 120
 QY 121 GIOTLMWRLEDDGSPR 135
 Db 121 gigtlmgrledgspr 135

RESULT 9

AA061033
 ID AAP61033 standard; Protein; 262 AA.

XX
 AC AAP61033;

DT 25-OCT-1991 (first entry)

XX Human beta-nerve growth factor gene product.

XX Beta-NGF; E.coli; ds.

XX Homo sapiens.

XX Key Location/Qualifiers

FT Protein 145..262

PN JP61205485-A.

PD 11-SEP-1986.

XX 09-MAR-1985; 85JP-0045773.

PR 09-MAR-1985; 85JP-0045773.

XX (OTSU/) OTSUKA E.

XX WPI; 1986-281696/43.

XX Gene segment of human nerve growth factor - used in prodn. of

PT NGF-producing recombinant Escherichia strain.

XX Claim 32; Page 482; 71pp; Japanese.

XX The protein is a direct translation of the upstream tryptophan

CC promoter-operator lacking its attenuation sequence and human

CC beta-NGF sequence. The product may be efficiently expressed from a

CC transformed E.coli expression system.

XX See also AA060816-7.

XX Sequence 262 AA;

Query Match 90.4%; Score 623; DB 7; Length 262;

Best Local Similarity 92.6%; Pred. No. 6.5e-55;

Matches 125; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNAMLRARLYOLAYDTYQEFEEAYILKEOKYSFLQNPQTSLCFSESIP 60
 Db 1 mfpitpislrlfdnamlrahrlhqlafdtgqfseayipkqkysflqnpqtslcfesesip 60
 QY 61 TPSNRVKTQOKSNLELRISLLIQSWLEPQVQLRISVFANSILYVGASDSNVYRHKLDEE 120
 Db 61 tpsnrvtqkqsnlelrlrlslilqlgswlepqvqlrsvfansllygsadsnvylkldee 120
 QY 121 GIOTLMWRLEDDGSPR 135
 Db 121 gigtlmgrledgspr 135

RESULT 10

AA011740

ID AA011740 standard; Protein; 262 AA.

XX AA011740;

DT 25-JUN-1991 (first entry)

XX Human growth hormone/human nerve growth factor beta fusion protein.

XX hGH; hNGF; nervous system diseases; dementia.

XX Homo sapiens.

PN JP03067598-A.

PD 22-MAR-1991.

XX 07-JUL-1989; 89JP-0202835.

PR 07-AUG-1989; 89JP-0202835.

XX (TOYJ) TOSOH CORP.

DR WPI; 1991-128768/18.

DR N-PSDB; AA011578.

XX Purification of human neuron growth factor beta-subunit-contg. protein -
 PT by contacting with gel having cation exchange gp. in presence of
 PT urea

XX Disclosure ; fig 1; 7pp; Japanese.

XX A recombinant human nerve growth factor beta subunit-contg. protein

CC can be produced as this fusion protein. It is purified by contacting

CC a gel having a cation exchange gp. with the fusion protein, in the

CC presence of urea. The purified protein is useful in a medicament

XX for treating disorders of the nervous system, eg dementia.

XX Sequence 262 AA;

Query Match 90.4%; Score 623; DB 12; Length 262;

Best Local Similarity 92.6%; Pred. No. 6.5e-55;

Matches 125; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNAMLRARLYOLAYDTYQEFEEAYILKEOKYSFLQNPQTSLCFSESIP 60
 Db 1 mfpitpislrlfdnamlrahrlhqlafdtgqfseayipkqkysflqnpqtslcfesesip 60
 QY 61 TPSNRVKTQOKSNLELRISLLIQSWLEPQVQLRISVFANSILYVGASDSNVYRHKLDEE 120
 Db 61 tpsnrvtqkqsnlelrlrlslilqlgswlepqvqlrsvfansllygsadsnvylkldee 120
 QY 121 GIOTLMWRLEDDGSPR 135
 Db 121 gigtlmgrledgspr 135

RESULT 11

AA005313

ID AA005313 standard; Protein; 144 AA.

XX AA005313;

DT 19-JUL-1990 (first entry)

XX Segment of B-cell stimulatory factor-2 (IL-5).

XX B-cell stimulatory factor-2; interleukin-5.

XX Homo sapiens.

PN JP02013375-A.

CC In the method of the invention.

XX Sequence 191 AA;

Query Match 89.7%; Score 618; DB 20; Length 191;
Best Local Similarity 92.5%; Pred. No. 1,4e-54;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

```
QY 2 FFTIPLSRFLFDNAMLRARLYOLADTYOEFEFAYILKEOKYSFLQNPQTSICFSESIP 61
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 1 fptip|sr|fdnam|rah|rh|q|a|fd|ty|qe|e|e|y|p|k|e|q|y|s|f|l|q|p|q|t|s|c|f|s|e|i|p|c 60
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSLVYGASDSNVYRHLKDLDEG 121
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 61 pnr|e|e|t|q|k|n|l|l|r|s|l|l|l|q|s|w|l|e|p|v|q|f|l|r|s|v|f|a|n|s|l|v|y|g|a|s|d|n|v|d|l|k|d|l|e|e|g 120
QY 122 IOTLMWRLEDGSPR 135
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 121 i|q|l|m|g|r|l|e|d|g|s|p|r 134
```

RESULT 14

AAV04396
ID AAY04396 standard; protein; 191 AA.

AC AAY04396;

DT 29-JUN-1999 (first entry)

DE Natural human 22kDa growth hormone.

XX Human; 22kDa growth hormone; hGH; mutant; thrombin; resistance;

KW plasmin; decomposition.

XX Homo sapiens.

PN JP11092499-A.

PD 06-APR-1999.

PF 22-SEP-1997; 97JP-0275277.

PR 22-SEP-1997; 97JP-0275277.

PA (SUMU) SUMITOMO SEIYAKU KK.

DR WPI: 1999-283567/24.

PT A human growth hormone mutant - with equivalent activity to natural

PS human growth hormone

Example 1; Page 5-6; 10pp; Japanese.

XX The present invention describes a human growth hormone mutant in which
CC the 134th Arg and the 135th Thr are replaced respectively by Asp and Pro
CC in the 1st to the 191st amino acid sequence of natural type human 22 kDa
CC growth hormone (hGH) and which has a resistance against decomposition by
CC thrombin. The present sequence represents the natural hGH. Also
CC described are: (1) a hGH mutant in which the 134th Arg, the 135th Thr
CC and the 140th Lys are replaced respectively by Asp, Pro and Ala in the
CC amino acid sequence of natural type hGH and which has a resistance
CC against decomposition by thrombin and plasmin; and (2) a drug
CC preparation containing the above hGH mutant as the active component.
CC The mutant hGH shows an activity approximately equivalent to that of
CC natural type hGH and shows a high stability in blood and body fluid.

XX Sequence 191 AA;

Query Match 89.7%; Score 618; DB 20; Length 191;
Best Local Similarity 92.5%; Pred. No. 1,4e-54;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

```
QY 2 FFTIPLSRFLFDNAMLRARLYOLADTYOEFEFAYILKEOKYSFLQNPQTSICFSESIP 61
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 1 fptip|sr|fdnam|rah|rh|q|a|fd|ty|qe|e|e|y|p|k|e|q|y|s|f|l|q|p|q|t|s|c|f|s|e|i|p|c 60
```

QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSLVYGASDSNVYRHLKDLDEG 121
Db 61 pnr|e|e|t|q|k|n|l|l|r|s|l|l|l|q|s|w|l|e|p|v|q|f|l|r|s|v|f|a|n|s|l|v|y|g|a|s|d|n|v|d|l|k|d|l|e|e|g 120

```
QY 122 IOTLMWRLEDGSPR 135
   |||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||
Db 121 i|q|l|m|g|r|l|e|d|g|s|p|r 134
```

RESULT 15

AAV78425
ID AAY78425 standard; protein; 191 AA.

AC AAY78425;

DT 09-MAY-2000 (first entry)

DE Human growth hormone amino acid sequence.

XX Human growth hormone; hGH; prolactin; placental lactogen;

KW modification; mutagenesis.

XX Homo sapiens.

PN US6013478-A.

PD 11-JAN-2000.

PE 24-JUN-1998; 98US-0104036.

PR 26-OCT-1989; 89US-0428066.

PR 27-APR-1992; 92US-0875204.

PR 13-OCT-1992; 92US-0960227.

PR 02-FEB-1994; 94US-0190723.

PR 06-JUN-1995; 95US-0483039.

PR 30-JUN-1997; 97US-0903398.

PR 28-OCT-1988; 88US-0264611.

PA (GETH) GENENTECH INC.

PI Wells JA, Cunningham BC;

DR WPI: 2000-159873/14.

PT Recombinant production of variant polypeptides, e.g. growth hormone

PS variants with altered receptor specificity, using cells transformed

PT with DNA selected by scanning mutagenesis in at least one peptide

PS domain

Example 2; Fig 2; 83pp; English.

XX The present invention describes the production of a polypeptide variant
CC (1) comprising segment substituted and residue substituted growth
CC hormone, prolactin or placental lactogens. The method is particularly
CC used to produce variants of growth hormone (GH), prolactin or placental
CC lactogen, but may also be applied to receptors, interferons, and
CC colony-stimulating factors. A particular application is the production
CC of human GH variants with altered (decreased or increased) binding
CC interaction with the somatogenic receptor, i.e. compounds useful as
CC human GH (ant)agonists and which may have higher potency for stimulating
CC other human GH receptors, and as standards or tracers in immunoassays
CC for human GH. This method of DNA selection identifies the biologically
CC active residues in active domains, including those critical for
CC interaction with different targets. The present sequence represents the
CC human GH amino acid sequence, which is used in the exemplification of
CC the present invention.

XX Sequence 191 AA;

Query Match 89.7%; Score 618; DB 21; Length 191;
Best Local Similarity 92.5%; Pred. No. 1.4e-54;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

```
QY 2 FPTPLSLRLEEDNMMLRARRLYXQLAADTYQFEFEAYILKEQKYSFLQNPQTSICFSESIPR 61
    |||:|||||
Db 1 fptlpsrlfdnamlrahrlhqlafdtlygefeeaylpkeqkysflqnpqtslcfesesipl 60
    |||:|||||

QY 62 PSNRVKTOOKSNLELRISLLIOSWLEPYQLRSVFANSLSLVYGASDSNYYRHLKDLDEEG 121
    |||:|||||
Db 61 psnreeetqgksnlellrlsllllqswlepyqlrsvfansiyygaadsnvydlkdldeeg 120
    |||:|||||

QY 122 IQTLMMRLEEDGSPR 135
    |||:|||||
Db 121 iqtlmgrfledgspr 134
    |||:|||||
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Job time: 248 sec

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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:58:40 ; Search time 20.68 Seconds
(without alignments)
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Title: US-09-819-094-30
Perfect score: 689
Sequence: 1 MFPIPLSRLEFDNMLRARR.....KDEEGTQTLMWRLDGSPP 135

Scoring table: GAPOP 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-Processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued Patents, AA:*
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4: /cgn2_6/ptodata/2/1aa/6B.COMB.pep:*
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6: /cgn2_6/ptodata/2/1aa/Backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	623	90.4	192	1	US-08-093-383-1
2	618	89.7	191	4	US-09-284-878-5
3	618	89.7	194	2	US-08-383-621-4
4	618	89.7	194	3	US-08-459-906-4
5	618	89.7	217	3	US-08-589-028-10
6	618	89.7	217	3	US-08-784-582-10
7	618	89.7	217	4	US-08-785-271-10
8	618	89.7	217	4	US-08-759-628-11
9	618	89.7	217	4	US-09-284-878-11
10	618	89.7	274	3	US-08-784-582-71
11	618	89.7	360	3	US-08-784-582-73
12	612	88.8	191	4	US-09-465-461-1
13	612	88.8	217	1	US-08-187-756C-4
14	612	88.8	217	1	US-08-469-486-51
15	612	88.8	217	2	US-08-469-658-51
16	612	88.8	217	2	US-08-710-324A-4
17	603	87.5	191	4	US-08-800-215C-16
18	603	87.5	191	4	US-08-800-215C-20
19	594	86.2	191	4	US-08-800-215C-18
20	532.5	77.3	176	3	US-08-791-728-1
21	526.5	76.4	21	3	US-08-791-728-2
22	507	73.6	168	6	5424199-3
23	501.5	72.8	198	1	US-08-187-756C-5
24	501.5	72.8	198	2	US-08-710-324A-5
25	428	62.1	191	1	US-08-468-824-8
26	426	61.8	191	1	US-07-963-331D-4
27	425	61.7	216	2	US-09-105-651-1

28	423	61.4	190	1	US-08-388-267C-2	Sequence 2, Appl1
29	423	61.4	190	4	US-09-277-720-2	Sequence 2, Appl1
30	423	61.4	191	6	5210180-1	Patent No. 5210180
31	423	61.4	193	1	US-07-621-197C-2	Sequence 2, Appl1
32	423	61.4	193	1	US-08-363-982-2	Sequence 2, Appl1
33	423	61.4	193	2	US-08-383-621-1	Sequence 1, Appl1
34	423	61.4	193	3	US-08-459-906-1	Sequence 1, Appl1
35	423	61.4	216	2	US-09-105-651-3	Sequence 3, Appl1
36	421	61.1	190	1	US-07-963-331D-3	Sequence 3, Appl1
37	420	61.0	191	1	US-07-922-523-1	Sequence 1, Appl1
38	420	61.0	191	2	US-08-222-987-1	Sequence 1, Appl1
39	408	59.2	191	1	US-08-093-383-3	Sequence 1, Appl1
40	405	58.8	193	2	US-08-383-621-3	Sequence 3, Appl1
41	405	58.8	193	3	US-08-459-906-3	Sequence 3, Appl1
42	403	58.5	191	1	US-07-885-689A-29	Sequence 29, Appl1
43	403	58.5	193	2	US-08-383-621-2	Sequence 2, Appl1
44	403	58.5	193	3	US-08-459-906-2	Sequence 2, Appl1
45	403	58.5	199	1	US-07-801-164A-4	Sequence 4, Appl1

ALIGNMENTS

RESULT 1
US-08-093-383-1
; Sequence 1, Application US/08093383
; Patent No. 5489529
; GENERAL INFORMATION:
; APPLICANT: DeBoer, Herman A.
; APPLICANT: Heyneker, Herbert L.
; APPLICANT: Seeburg, Peter H.
; TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone
; NUMBER OF SEQUENCES: 30
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 460 Point San Bruno Blvd
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 5.25 Inch, 360 KB floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: patin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/093,383
; FILING DATE: 14-JUL-1993
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/619827
; FILING DATE: 28-NOV-1990
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 07/198824
; FILING DATE: 05-APR-1988
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 06/632361
; FILING DATE: 19-JUL-1984
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 06/303687
; FILING DATE: 18-SEP-1981
; ATTORNEY/AGENT INFORMATION:
; NAME: Johnston, Sean A.
; REGISTRATION NUMBER: P35,910
; REFERENCE/DOCKET NUMBER: 46C4
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 415/225-3562
; TELEFAX: 415/952-9861
; TELEX: 910/371-7168
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 192 amino acids
; TYPE: amino acid

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TOPOLOGY: linear
US-08-093-383-1

Query Match          90.4%; Score 623; DB 1; Length 192;
Best Local Similarity 92.6%; Pred. No. 4,2e-67;
Matches 125; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

OY 1 MFPTPLSRLEFDNMLRARLYOLAYDTYOEFEEAYILKEOKYSFLQNPQTSICFSESIP 60
DB 1 MFPTPLSRLEFDNMLRARLHQLAFDTYOEFEEAYILKEOKYSFLQNPQTSICFSESIP 60
OY 61 TPSNRVKTQOKSNLELLRISLLIQSWLEPVOQLRSVFANSLSYVGASDSNVYRLKDLDEE 120
DB 61 TPSNRKTQOKSNLELLRISLLIQSWLEPVOQLRSVFANSLSYVGASDSNVYDLKDLDEE 120
OY 121 GIOTLMGRLEDEGSPR 135
DB 121 GIOTLMGRLEDEGSPR 135

RESULT 2
US-09-284-878-5
; Sequence 5, Application US/09284878
; Patent No. 6342375
; GENERAL INFORMATION:
; APPLICANT: Olazaran, Martha Guerrero
; APPLICANT: Saldana, Hugo Barrera
; APPLICANT: Salgado, Jose Maria Viader
; TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast for the
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone
; FILE REFERENCE: 1829.0010000
; CURRENT APPLICATION NUMBER: US/09/284,878
; PRIOR FILING DATE: 1999-07-21
; PRIOR APPLICATION NUMBER: PCT/MX97/00033
; PRIOR FILING DATE: 1997-10-24
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 5
; LENGTH: 191
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-284-878-5

Query Match          89.7%; Score 618; DB 4; Length 191;
Best Local Similarity 92.5%; Pred. No. 1,7e-66;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

OY 2 FPTPLSRLEFDNMLRARLYOLAYDTYOEFEEAYILKEOKYSFLQNPQTSICFSESIP 61
DB 1 FPTPLSRLEFDNMLRARLHQLAFDTYOEFEEAYILKEOKYSFLQNPQTSICFSESIP 60
OY 62 PSNRVKTQOKSNLELLRISLLIQSWLEPVOQLRSVFANSLSYVGASDSNVYRLKDLDEE 121
DB 61 PSNRKTQOKSNLELLRISLLIQSWLEPVOQLRSVFANSLSYVGASDSNVYDLKDLDEE 120
OY 122 IOTLMGRLEDEGSPR 135
DB 121 IOTLMGRLEDEGSPR 134

RESULT 3
US-08-383-621-4
; Sequence 4, Application US/08383621
; Patent No. 5951972
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.
```

```

; TITLE OF INVENTION: Stabilization Of Somatotropins And Other
; TITLE OF INVENTION: Proteins By Modification Of Cysteine Residues
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Dr. Estelle J. Tsevdos
; STREET: 1937 West Main Street, P.O. Box 60
; CITY: Stamford
; STATE: Connecticut
; COUNTRY: U.S.A.
; ZIP: 06904-0060
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/383,621
; FILING DATE: 06-FEB-1995
; CLASSIFICATION: 514
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/766,142
; FILING DATE: 25-SEP-1991
; ATTORNEY/AGENT INFORMATION:
; NAME: Tsevdos, Estelle J.
; REGISTRATION NUMBER: 31,145
; REFERENCE/DOCKET NUMBER: 31,278-01
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 203-321-2756
; TELEFAX: 203-321-2971
; TELEX: 203-710-474-4059
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 194 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-383-621-4

Query Match          89.7%; Score 618; DB 2; Length 194;
Best Local Similarity 92.5%; Pred. No. 1,7e-66;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

OY 2 FPTPLSRLEFDNMLRARLYOLAYDTYOEFEEAYILKEOKYSFLQNPQTSICFSESIP 61
DB 4 FPTPLSRLEFDNMLRARLHQLAFDTYOEFEEAYILKEOKYSFLQNPQTSICFSESIP 63
OY 62 PSNRVKTQOKSNLELLRISLLIQSWLEPVOQLRSVFANSLSYVGASDSNVYRLKDLDEE 121
DB 64 PSNRKTQOKSNLELLRISLLIQSWLEPVOQLRSVFANSLSYVGASDSNVYDLKDLDEE 123
OY 122 IOTLMGRLEDEGSPR 135
DB 124 IOTLMGRLEDEGSPR 137

RESULT 4
US-08-459-906-4
; Sequence 4, Application US/08459906
; Patent No. 6010999
; GENERAL INFORMATION:
; APPLICANT: Daley, Michael J.
; APPLICANT: Buckwalter, Brian L.
; APPLICANT: Cady, Susan M.
; APPLICANT: Shieh, Hong-Ming
; APPLICANT: Bohlen, Peter
; APPLICANT: Seddon, Andrew P.
; TITLE OF INVENTION: Stabilization of Somatotropins and Other
; TITLE OF INVENTION: Proteins by Modification of Cysteine Residues
; NUMBER OF SEQUENCES: 11
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: American Cyanamid Company
; STREET: One Cyanamid Plaza
```

```

City: Wayne
STATE: New Jersey
COUNTRY: U S A
ZIP: 07470-8426
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/459,906
FILING DATE: 02-JUN-1995
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: Webster, Darryl L.
REGISTRATION NUMBER: 34,276
REFERENCE/DOCKET NUMBER: 31,278-03
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-831-3247
TELEFAX: 201-831-3305
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 194 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
OS-08-459-906-4

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Query Match: 99.7%; Score 618; Db 3; Length 194;
Best local Similarity 92.5%; Pred. No. 1,7e-66;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0

OY 2 FPIPIPLSRLEFDNAMLRARLYQLAYDYVOEEFAYIIKEQKYSFLQNPQTSLCFSIESIPT 61
    | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db 4 FPIPIPLSRLEFDNAMLRARLYQLAYDYVOEEFAYIIPEKQKYSFLQNPQTSLCFSIESIPT 63
    | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

OY 62 PSNRVYVTOOKSNLEILIRISLLIQSMLEPYOLLRSVFANSLVYGASPSNNYRHLKDLDEG 121
    | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db 64 PSNRREYQOKSNLEILIRISLLIQSMLEPYOLLRSVFANSLVYGASPSNNYDLKLKDLDEG 123
    | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

OY 122 IQTLMRLEDEGSPR 135
    | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
Db 124 IQTLMRLEDEGSPR 137
    | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

RESULT 5
US-08-589-028-10
Sequence 10, Application US/08589028
Patent No. 6087129
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe
APPLICANT: No. 6087129mlington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thigpen, Anice E.
APPLICANT: Quade, Christian
APPLICANT: Kruse, Fred
TITLE OF INVENTION: Recombinant Expression of Proteins From
TITLE OF INVENTION: Secretory Cell lines
NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P. O. Box 4433
City: Houston
STATE: TX
COUNTRY: USA
ZIP: 77210-4433
COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30

```

```

? CURRENT APPLICATION DATA:
? APPLICATION NUMBER: US/08/589, 028
? FILING DATE: Concurrently Herewith
? CLASSIFICATION: 435
? ATTORNEY/AGENT INFORMATION:
? NAME: Highlander, Steven L.
? REGISTRATION NUMBER: 47,642
? REFERENCE/DOCKET NUMBER: UTSID:426\HYL
? TELECOMMUNICATION INFORMATION:
? TELEPHONE: (512) 418-3000
? TELEFAX: (512) 474-7577
? INFORMATION FOR SEQ ID NO: 10:
? SEQUENCE CHARACTERISTICS:
? LENGTH: 217 amino acids
? TYPE: amino acid
? STRANDEDNESS:
? TOPOLOGY: linear
?
? US-08-589-028-10

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Query Match      89.7%; Score 618; DB 3; Length 217;
Best Local Similarity 92.5%; Pred. No. 2e-66;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

OY   2 FPTPLSLFDNMLRARRLYOLADVTYQEEFEAYLKEOKYSFLONPQTSCLFSESIP 61
      |||.....|||.....|||.....|||.....|||.....|||.....|||.....
DB   27 FPTPLSLRLDNAMLRAHRLHQIAEDTYQEFEAYIPEKOKYSFLONPQTSCLFSESIP 86
      |||.....|||.....|||.....|||.....|||.....|||.....|||.....
OY   62 PSNNVTKOOKSNLELRISLLLIOSGLPEVOLRSVFANSILVYGASDSNYRHKLDEE 121
      |||.....|||.....|||.....|||.....|||.....|||.....|||.....
DB   87 PSNNEETFOOKSNLELRISLLLIOSWLEVPOLRSVFANSILVYGASDSNYVDLKLDDE 146
      |||.....|||.....|||.....|||.....|||.....|||.....|||.....
OY   122 IQTLMNRLEDGSPR 135
      |||| ..|||.....
DB   147 IQTLMGRLEDGSPR 160

RESULT        6
US-08-784-582-10
: Sequence 10, Application US/08784582
: Patent No. 6110707
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe A.
APPLICANT: No. 6110707/mington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thigpen, Anice E.
APPLICANT: Quade, Christian
APPLICANT: Kruse, Fred
APPLICANT: McGarry, Dennis
TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
TITLE OF INVENTION: SECRETORY CELL LINES
NUMBER OF SEQUENCES: 79
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
CITY: Houston
STATE: Texas
COUNTRY: USA
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patent Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/784,582
FILING DATE: Concurrently Herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/028,427
FILING DATE: 15-OCT-1996
PRIOR APPLICATION DATA:

```

APPLICATION NUMBER: US 08/589,028
FILING DATE: 19-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:514
TELECOMMUNICATION INFORMATION:
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-784-582-10

Query Match 89.7%; Score 618; DB 3; Length 217;
Best Local Similarity 92.5%; Pred. No. 2e-66;

Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 2 FFTPLSLRFDNMLRARLYQLAYDTYOEFEEAYILKEOKYSPLONPQTSICFSES IPT 61
DB 27 FFTPLSLRFDNMLRARLYQLAYDTYOEFEEAYILKEOKYSPLONPQTSICFSES IPT 86
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSLSVYGASDSNVYRHLDKEEG 121
DB 87 PSNRRETOOKSNLELRISLLIQSWLEPVQLRSVFANSLSVYGASDSNVYRHLDKEEG 146
QY 122 IOTLMGRLEDSGR 135
DB 147 IOTLMGRLEDSGR 160

RESULT 7
US-08-785-271-10
Sequence 10, Application US/08785271
Patent No. 6194176
GENERAL INFORMATION:
APPLICANT: Newgard, Christopher B.
APPLICANT: Halban, Philippe A.
APPLICANT: No. 6194176mington, Karl D.
APPLICANT: Clark, Samuel A.
APPLICANT: Thigpen, Anice E.
APPLICANT: Quade, Christian
TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
NUMBER OF SEQUENCES: 56
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
STREET: P.O. Box 4433
CITY: Houston
STATE: Texas
COUNTRY: USA
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/785,271
FILING DATE: Concurrently herewith
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/589,028
FILING DATE: 19-JAN-1996
ATTORNEY/AGENT INFORMATION:
NAME: Highlander, Steven L.
REGISTRATION NUMBER: 37,642
REFERENCE/DOCKET NUMBER: UTSD:513

TELECOMMUNICATION INFORMATION:
TELEPHONE: 512/418-3000
TELEFAX: 512/474-7577
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
US-08-785-271-10

Query Match 89.7%; Score 618; DB 4; Length 217;
Best Local Similarity 92.5%; Pred. No. 2e-66;

Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

QY 2 FFTPLSLRFDNMLRARLYQLAYDTYOEFEEAYILKEOKYSPLONPQTSICFSES IPT 61
DB 27 FFTPLSLRFDNMLRARLYQLAYDTYOEFEEAYILKEOKYSPLONPQTSICFSES IPT 86
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSLSVYGASDSNVYRHLDKEEG 121
DB 87 PSNRRETOOKSNLELRISLLIQSWLEPVQLRSVFANSLSVYGASDSNVYRHLDKEEG 146
QY 122 IOTLMGRLEDSGR 135
DB 147 IOTLMGRLEDSGR 160

RESULT 8
US-08-759-628-11
Sequence 11, Application US/08759628
Patent No. 6225446
GENERAL INFORMATION:
APPLICANT: Altman, Scott W.
APPLICANT: Rock, Fernando I.
APPLICANT: Bazan, J. Fernando
APPLICANT: Kastelein, Robert A.
TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMALIAN PROTEINS
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
ADDRESSEE: DNAX Research Institute
STREET: 901 California Avenue
CITY: Palo Alto
STATE: California
COUNTRY: USA
ZIP: 94304-1104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/759,628
FILING DATE: 05-DEC-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/008,574
FILING DATE: 06-DEC-1995
ATTORNEY/AGENT INFORMATION:
NAME: Ching, Edwin P.
REGISTRATION NUMBER: 34,090
REFERENCE/DOCKET NUMBER: DX05520
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-852-9196
TELEFAX: 415-496-1200
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISTICS:
LENGTH: 217 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: protein

Qy	2	FPITPLSRFLFDNANMRAKRLVQVADYVQEEAEKAYLLKEKYSFELQNPOTSICFSESPT	61
Db	27	FPITPLSRFLFDNANMRAKRLHQVAFDYYQEEAEAYIPKEQKYSFELQNPOTSICFSESPT	86
Qy	62	PSNRVTOOKSNLELLRLSILLIOSWLEPQVLLRSVANSVLYGASDSVYRHLKDLDEG	121
Db	87	PSNRREFOOKSNLELLRLSILLIOSWLEPQVFLRSVANSVLYGASDSVYVLLKDLDEG	146
Qy	122	IQTLMARLEDDGSPR	135
Db	147	IQTLMGRLEDDGSPR	160

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RESULT 11
US-08-784-582-73
; Sequence 73, Application US/08784582
; Patent No. 6110707
; GENERAL INFORMATION:
; APPLICANT: Newgard, Christopher B.
; APPLICANT: Halban, Philippe A.
; APPLICANT: No. 6110707mington, Karl D.
; APPLICANT: Clark, Samuel A.
; APPLICANT: Thijsen, Anice E.
; APPLICANT: Quade, Christian
; APPLICANT: Kruse, Fred
; APPLICANT: Mcgarry, Dennis
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM
; TITLE OF INVENTION: SECRETORY CELL LINES
; NUMBER OF SEQUENCES: 79
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Arnold, White & Durkee
; STREET: P.O. Box 4433
; CITY: Houston
; STATE: Texas
; COUNTRY: USA
; ZIP: 77210
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/784,582
; FILING DATE: Concurrently Herewith
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 60/028,427
; FILING DATE: 15-OCT-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/589,028
; FILING DATE: 19-JAN-1996
; ATTORNEY/AGENT INFORMATION:
; NAME: Highlander, Steven L.
; REGISTRATION NUMBER: 37,642
; REFERENCE/DOCKET NUMBER: UTSD:514
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 512/418-3000
; TELEFAX: 512/474-7577
; INFORMATION FOR SEQ ID NO: 73:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 360 amino acids
; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; US-08-784-582-73

Query Match      89.7%; Score 618; DB 3; Length 360;
Best Local Similarity 92.5%; Pred. No. 4.3e-66;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;
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; Sequence 1, Application US/09465461
; Patent No. 6348444
; GENERAL INFORMATION:
; APPLICANT: CHAPPEL, Scott
; TITLE OF INVENTION: Human Growth Hormone to stimulate hematopoiesis and immune rec
; after of invention: after hematopoietic stem cell transplantation in humans
; FILE REFERENCE: CHAPPEL-6.1
; CURRENT APPLICATION NUMBER: US/09/465,461
; CURRENT FILING DATE: 1999-12-17
; PRIOR APPLICATION NUMBER: 60/112,668
; PRIOR FILING DATE: 1998-12-17
; NUMBER OF SEQ ID NOS: 1
; SOFTWARE: Patentin version 3.1
; SEQ ID NO 1
; LENGTH: 191
; TYPE: PRT
; ORGANISM: homo sapiens
; US-09-465-461-1
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Query Match      88.8%; Score 612; DB 4; Length 191;
Best Local Similarity 91.8%; Pred. No. 8.7e-66;
Matches 123; Conservative 3; Mismatches 8; Indels 0; Gaps 0;

RESULT 13
US-08-187-756C-4
; Sequence 4, Application US/08187756C
; Patent No. 5597709
; GENERAL INFORMATION:
; APPLICANT: ROSEN, ET AL.
; TITLE OF INVENTION: Human Growth Hormone
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: CARELLA, BYRNE, BAIN, GILFILLAN,
; ADDRESS: CECCHI, STEWART & OLSTEIN
; STREET: 6 BECKER FARM ROAD
; CITY: ROSELAND
; STATE: NEW JERSEY
; COUNTRY: USA
; ZIP: 07068
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 INCH DISKETTE
; COMPUTER: IBM PS/2
; OPERATING SYSTEM: MS-DOS
; SOFTWARE: WORD PERFECT 5.1
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/187,756C
; FILING DATE: January 27, 1994
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER:
; FILING DATE:
; ATTORNEY/AGENT INFORMATION:
; NAME: FERRARO, GREGORY D.
; REGISTRATION NUMBER: 36,134
; REFERENCE/DOCKET NUMBER: 325800-55
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 201-994-1700
; TELEFAX: 201-994-1744
; INFORMATION FOR SEQ ID NO: 4:
```

SEQUENCE CHARACTERISTICS:
LENGTH: 217 AMINO ACIDS
TYPE: AMINO ACID
STRANDEDNESS:
TOPOLOGY: LINEAR
MOLECULE TYPE: PROTEIN
US-08-187-756C-4

Query Match 88.8%; Score 612; DB 1; Length 217;
Best Local Similarity 91.8%; Pred. No. 1.1e-65;

Matches 123; Conservative 3; Mismatches 8; Indels 0; Gaps 0;

QY 2 FPTPLSLRFLDNAMLRARLYQALYDTYQEFEEAYILKEQKYSFLQNPOTSLCFSES IPT 61
|||||
Db 27 FPTPLSLRFLDNAMLRARLYQALYDTYQEFEEAYILKEQKYSFLQNPOTSLCFSES IPT 86
|||||
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSIYVGASDSNRYRHLKDL EEG 121
|||||
Db 87 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSIYVGASDSNRYRHLKDL EEG 146
|||||
QY 122 IOTLMWRLEDGSPR 135
|||||
Db 147 IOTLMWRLEDGSPR 160
|||||

RESULT 14
US-08-469-486-51

; Sequence 51, Application US/08469486
; Patent No. 5739281

; GENERAL INFORMATION:

; APPLICANT: Thøgersen, Hans Christian
; APPLICANT: Hollet, Thor Las

; APPLICANT: Etzerodt, Michael
; TITLE OF INVENTION: Improved method for the refolding of

; TITLE OF INVENTION: proteins
; NUMBER OF SEQUENCES: 58

; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Fish & Richardson

; STREET: 225 Franklin Street
; CITY: Boston

; STATE: Massachusetts
; COUNTRY: USA

; ZIP: 02110-2804

; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patentln Release #1.0, Version
; SOFTWARE: #1.25

; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/469,486

; FILING DATE:
; CLASSIFICATION: 530

; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/192,060

; FILING DATE: February 4, 1994
; ATTORNEY/AGENT INFORMATION:

; NAME: Paul T. Clark
; REGISTRATION NUMBER: 30,162

; REFERENCE/DOCKET NUMBER: 06363/002001
; TELECOMMUNICATION INFORMATION:

; TELEPHONE: 617 542 5070
; TELEFAX: 617 542 8906

; TELEX: 200154

; INFORMATION FOR SEQ ID NO: 51:
; SEQUENCE CHARACTERISTICS:

; LENGTH: 217 amino acids
; TYPE: amino acid

; STRANDEDNESS:
; TOPOLOGY: linear

; MOLECULE TYPE: protein
; US-08-469-486-51

Query Match 88.8%; Score 612; DB 1; Length 217;
Best Local Similarity 91.8%; Pred. No. 1.1e-65;

Matches 123; Conservative 3; Mismatches 8; Indels 0; Gaps 0;

QY 2 FPTPLSLRFLDNAMLRARLYQALYDTYQEFEEAYILKEQKYSFLQNPOTSLCFSES IPT 61
|||||
Db 27 FPTPLSLRFLDNAMLRARLYQALYDTYQEFEEAYILKEQKYSFLQNPOTSLCFSES IPT 86
|||||
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSIYVGASDSNRYRHLKDL EEG 121
|||||
Db 87 PSNRVKTQOKSNLELRISLLIQSWLEPVQLRSVFANSIYVGASDSNRYRHLKDL EEG 146
|||||
QY 122 IOTLMWRLEDGSPR 135
|||||
Db 147 IOTLMWRLEDGSPR 160
|||||

RESULT 15
US-08-469-658-51

; Sequence 51, Application US/08469658
; Patent No. 5917018

; GENERAL INFORMATION:
; APPLICANT: Thøgersen, Hans Christian

; APPLICANT: Hollet, Thor Las
; APPLICANT: Etzerodt, Michael

; TITLE OF INVENTION: IMPROVED METHOD FOR THE REFOLDING OF
; TITLE OF INVENTION: PROTEINS

; NUMBER OF SEQUENCES: 58
; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Fish & Richardson P.C.
; STREET: 225 Franklin Street

; CITY: Boston
; STATE: Massachusetts

; COUNTRY: USA
; ZIP: 02110-2804

; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patentln Release #1.0, Version
; SOFTWARE: #1.25

; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/469,658

; FILING DATE: June 5, 1995
; CLASSIFICATION: 530

; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/192,060

; FILING DATE: February 4, 1994
; CLASSIFICATION: 530

; ATTORNEY/AGENT INFORMATION:
; NAME: Paul T. Clark

; REGISTRATION NUMBER: 30,162
; REFERENCE/DOCKET NUMBER: 06363/002002

; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617 542 5070

; TELEFAX: 617 542 8906
; TELEX: 200154

; INFORMATION FOR SEQ ID NO: 51:
; SEQUENCE CHARACTERISTICS:

; LENGTH: 217 amino acids
; TYPE: amino acid

; STRANDEDNESS:
; TOPOLOGY: linear

; MOLECULE TYPE: protein
; US-08-469-658-51

Query Match 88.8%; Score 612; DB 2; Length 217;
Best Local Similarity 91.8%; Pred. No. 1.1e-65;

Matches 123; Conservative 3; Mismatches 8; Indels 0; Gaps 0;

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OY 2 FPIPIPSRLFDNMMLRARLYQIAYDYOEFEEAYILKEOKYSFLQNPQTSICFSES IPT 61
    ||||||| ||| |||:||||| ||| ||||||| ||||||| |||
Db 27 FPIPIPSRLFDNMMLRARLYQIAYDYOEFEEAYILKEOKYSFLQNPQTSICFSES IPT 86
    ||||||| ||| |||:||||| ||| ||||||| ||||||| |||
OY 62 PSNRVKTQOKSNLELLRISILLIQSWLEPYQLRSVFANSLYYGASDSNVYRHLKDLEEG 121
    ||| :||||| ||||||| ||| ||||||| ||||||| |||
Db 87 PSNRETOOKSNLELLRISILLIQSWLEPYQLRSVFANSLYYGASDSNVYRHLKDLEEG 146
    ||| :||||| ||||||| ||| ||||||| ||||||| |||
OY 122 IOTIMWRLEDDGSPR 135
    ||| ||| ||| ||| ||| ||| ||| ||| |||
Db 147 IOTIMGRLEDDGSPR 160
    ||| ||| ||| ||| ||| ||| ||| ||| |||
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Search completed: September 25, 2002, 09:58:41
Job time: 160 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:58:12 ; Search time 28.13 seconds

(without alignments)
461.147 Million cell updates/sec

Title: US-09-819-094-30

Perfect score: 689

Sequence: 1 MPPRLSLRFLPDNMLRARR.....KDEEGIQTLMLRLDGSPPR 135

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Database : PIR.71:*

1: pirl:*

2: pirl:*

3: pirl:*

4: pirl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	684	99.3	217	1	STHUV
2	646.5	93.8	256	1	STHUV2
3	618	89.7	217	1	STHU
4	592	85.9	217	2	167410
5	523	75.9	217	2	167409
6	519	75.3	212	2	167408
7	517	75.3	217	2	153267
8	517	75.0	217	2	167411
9	505	73.3	217	1	LCHUC
10	505	73.3	217	2	E32435
11	474	68.8	215	2	A26449
12	427	62.0	216	2	B49159
13	425	61.7	190	1	STHO
14	424	61.5	190	2	PN0140
15	423	61.4	190	2	JK0219
16	423	61.4	216	1	STPG
17	423	61.4	216	2	146145
18	423	61.4	216	2	JC4632
19	421	61.1	216	1	STMS
20	421	61.1	216	2	A37782
21	419	60.8	190	1	A61584
22	419	60.8	216	1	STRT
23	417	60.5	190	2	JS0429
24	417	60.5	216	2	S49483
25	403	58.5	217	1	STBO
26	394	57.2	217	1	STSH
27	394	57.2	217	1	STGT
28	394	57.2	217	2	S32682
29	386	56.0	216	2	JC1514

30	383	55.6	216	2	A60509	somatotropin precu
31	378	54.9	191	2	A60625	somatotropin - gre
32	368.5	53.5	216	2	S04929	somatotropin precu
33	346	50.2	199	2	B32435	choriomamotropin-
34	336	48.8	195	2	I51250	somatotropin - bow
35	327	47.5	190	2	S21750	somatotropin - Rus
36	322	46.7	190	2	A56816	somatotropin - bul
37	313	45.4	215	2	I51188	somatotropin - bul
38	312	45.3	215	2	JS0037	somatotropin precu
39	267.5	38.8	183	2	A60623	somatotropin - blu
40	240	34.8	139	2	S04353	somatotropin A - A
41	235	34.1	209	2	UT0483	somatotropin I pre
42	225.5	32.7	163	2	JN0387	somatotropin - sel
43	199	28.9	210	2	I50763	somatotropin - nob
44	199	28.9	210	2	S38351	somatotropin - sll
45	199	28.9	210	2	S21915	somatotropin - sll

ALIGNMENTS

RESULT 1

STHUV

N:Alternat names: growth hormone 2; growth hormone variant; hGH-V; placental somatot

N:Contains: somatotropin 2, long splice form; somatotropin 2, short splice form

C:Species: Homo sapiens (man)

C>Date: 17-Dec-1982 #sequence_revision 10-Feb-1995 #text_change 21-Jul-2000

C:Accession: D32435; B28072; A01511; I52104; A60711

R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Salana, H.A.; Gellinas, R.E.; Seeburg,

A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A:Reference number: A32435; MUID:89307277

A:Accession: D32435

A:Molecule type: DNA

A:Residues: 1-217 <CH>

A:Cross-references: GB:J03071; NID:q183148; PID:AAA52552.1; PID:q183152

R:Coake, N.E.; Ray, J.; Emery, J.G.; Liebhader, S.A.

J. Biol. Chem. 263, 9001-9006, 1988

A:Title: Two distinct species of human growth hormone-variant mRNA in the human plac

A:Reference number: A92725; MUID:88243769

A:Accession: B28072

A:Molecule type: mRNA

A:Residues: 1-217 <CO>

R:Seeburg, P.H.

DNA 1, 239-249, 1982

A:Title: The human growth hormone gene family: nucleotide sequences show recent diver

A:Reference number: A01511; MUID:83182010

A:Accession: A01511

A:Molecule type: DNA

A:Residues: 1-34, 'P', 36-217 <SE>

R:Igout, A.; Scippo, M.L.; Franckene, F.; Hennen, G.

Arch. Int. Physiol. Biochim. 96, 63-67, 1988

A:Title: Cloning and nucleotide sequence of placental hGH-V cDNA.

A:Reference number: I52104; MUID:89024984

A:Accession: I52104

A>Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: mRNA

A:Residues: 1-217 <IG>

A:Cross-references: GB:M38451; NID:q183179; PID:AAA35891.1; PID:q183180

R:Franckene, F.; Scippo, M.L.; Van Beeumen, J.; Igout, A.; Hennen, G.

J. Clin. Endocrinol. Metab. 71, 15-18, 1990

A:Title: Identification of placental human growth hormone as the growth hormone-V gen

A:Reference number: A60711; MUID:90317018

A:Accession: A60711

A:Molecule type: protein

A:Residues: 27-44;46-57 <FRA>

A:Experimental source: tissue Placenta

C:Note: partial glycosylation was demonstrated by lectin binding

C:Comment: This gene is expressed by the placenta.

C:Genetics:

A:Gene: GDB:GH2

A:Cross-references: GDB:119983; OMIM:139240

A:Map position: 17q22-17q24
 A:Introns: 4/1: 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; glycoprotein; hormone; placenta
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-217/Product: somatotropin 2, long splice form #status predicted <SOL>
 F:27-57,73-217/Product: somatotropin 2, short splice form #status predicted <SOS>
 F:79-191,208-215/Dissulfide bonds: #status predicted
 F:166/Binding site: carbohydrate (asn) (covalent) #status predicted

Query Match 99.3%; Score 684; DB 1; Length 217;
 Best Local Similarity 100.0%; Pred. No. 1.6e-59;
 Matches 134; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 2 FFTILSLRFDNAMLRRRLVQLADYDYOEFEEAYILKEOKYSFLQNQTSICSESIP 61
 DB 27 FFTILSLRFDNAMLRRRLVQLADYDYOEFEEAYILKEOKYSFLQNQTSICSESIP 86
 OY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSILVYGASDSNVYRHLKDEEG 121
 DB 87 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSILVYGASDSNVYRHLKDEEG 146
 OY 122 IOTLMWRLEDSGR 135
 DB 147 IOTLMWRLEDSGR 160

RESULT 2
 STRHU2
 somatotropin 2 precursor, splice form 2 - human
 N:Alternate names: growth hormone variant-2; placental somatotropin form 2
 C:Species: Homo sapiens (man)
 C:Date: 30-Sep-1983 #sequence_revision 10-Feb-1995 #text_change 02-Sep-1997
 C:Accession: A28072
 R:Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhauer, S.A.
 J. Biol. Chem. 263, 9001-9006, 1988
 A:Title: Two distinct species of human growth hormone-variant mRNA in the human placenta
 A:Reference number: A92725; MUID:88243769
 A:Accession: A28072
 A:Molecule type: mRNA
 A:Residues: 1-256 <COO>
 A>Note: an alternative splice junction for intron 4 is used
 C:Genetics:
 A:Gene: GDB:GH2
 A:Cross-references: GDB:119983; OMIM:139240
 A:Map position: 17q22-17q24
 A:Introns: 4/1: 57/3; 97/3; 152/3
 C:Superfamily: prolactin
 C:Keywords: alternative splicing; hormone; placenta
 F:1-26/Domain: signal sequence #status predicted <SIG>
 F:27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

Query Match 93.8%; Score 646.5; DB 1; Length 256;
 Best Local Similarity 96.3%; Pred. No. 8.9e-56;
 Matches 129; Conservative 1; Mismatches 3; Indels 1; Gaps 1;

OY 2 FFTILSLRFDNAMLRRRLVQLADYDYOEFEEAYILKEOKYSFLQNQTSICSESIP 61
 DB 27 FFTILSLRFDNAMLRRRLVQLADYDYOEFEEAYILKEOKYSFLQNQTSICSESIP 86
 OY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSILVYGASDSNVYRHLKDEEG 121
 DB 87 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSILVYGASDSNVYRHLKDEEG 146
 OY 122 IOTLMWRLEDSGR 134
 DB 147 IOTLMWRLEDSGR 160

RESULT 3
 STRHU

somatotropin 1 precursor [validated] - human
 N:Alternate names: growth hormone 1; hGH-N; pituitary somatotropin
 N:Contents: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short form
 C:Species: Homo sapiens (man)
 C:Date: 24-Apr-1984 #sequence_revision 10-Feb-1995 #text_change 08-Dec-2000
 C:Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217;
 R:Denoto, F.M.; Moore, D.D.; Goodman, H.M.
 Nucleic Acids Res. 9, 3719-3730, 1981
 A:Title: Human growth hormone DNA sequence and mRNA structure: possible alternative s
 A:Reference number: A93731; MUID:82014939
 A:Accession: A93731
 A:Molecule type: DNA
 A:Residues: 1-217 <DEN>
 A:Cross-references: GB:V00520
 A>Note: The 20K short form somatotropin lacks residues 58-72 (32-46 in the active hor
 R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg,
 Genomics 4, 479-497, 1989
 A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.
 A:Reference number: A32435; MUID:89307277
 A:Accession: A32435
 A:Molecule type: DNA
 A:Residues: 1-217 <CHE>
 A:Cross-references: GB:J03071; MUID:q183148; PIDN:AAA52549.1; PID:q183149
 R:Roskam, M.; Rougeon, F. 7, 305-320, 1979
 Nucleic Acids Res. 7, 305-320, 1979
 A:Title: Molecular cloning and nucleotide sequence of the human growth hormone struct
 A:Reference number: A93694; MUID:80034477
 A:Accession: A93694
 A:Molecule type: mRNA
 A:Residues: 1-217 <ROS>
 A:Cross-references: GB:V00519
 A>Note: 35-pro was also found
 R:Marital, J.A.; Halliwell, R.A.; Baxter, J.D.; Goodman, H.M.
 Science 205, 602-607, 1979
 A:Title: Human growth hormone: complementary DNA cloning and expression in bacteria.
 A:Reference number: A94477; MUID:79203293
 A:Accession: A94247
 A:Molecule type: mRNA
 A:Residues: 1-217 <MAR>
 R:Li, C.H.; Dixon, J.S.; Liu, W.K.
 Arch. Biochem. Biophys. 133, 70-91, 1969
 A:Title: Human pituitary growth hormone, XXXII. The primary structure of the hormone.
 A:Reference number: A90048; MUID:69289202
 A:Contents: annotation
 R:Li, C.H.; Dixon, J.S.
 Arch. Biochem. Biophys. 146, 233-236, 1971
 A:Title: Human pituitary growth hormone, XXXII. The primary structure of the hormone:
 A:Reference number: A90051; MUID:72143935
 A:Accession: A90051
 A:Molecule type: protein
 A:Residues: 27-94;96-217 <LIC>
 R:Nail, H.D.
 Nature New Biol. 230, 90-91, 1971
 A:Title: Revised primary structure for human growth hormone.
 A:Reference number: A93397; MUID:71139765
 A:Accession: A93397
 A:Molecule type: protein
 A:Residues: 27-51 <NIA>
 R:Nail, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.
 Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971
 A:Title: Sequences of pituitary and placental lactogenic and growth hormones: evoluit
 A:Reference number: A93778; MUID:71153968
 A:Accession: A93778
 A:Molecule type: protein
 A:Residues: 119-120;157-159 <NI2>
 R:Nail, H.D.
 in Prolactin and Carcinogenesis. Proc. Fourth Tenovus Workshop Prolactin, Griffiths,
 A:Title: The chemistry of the human lactogenic hormones.
 A:Reference number: A94427
 A:Contents: annotation; somatotropin revision
 R:Bewley, T.A.; Dixon, J.S.; Li, C.H.
 Int. J. Pept. Protein Res. 4, 281-287, 1972
 A:Title: Sequence comparison of human pituitary growth hormone, human chorionic somat

A:Reference number: A91764; MUID:73092028
A:Accession: A91764
A:Molecule type: protein
A:Residues: 27-217 <BEM>
R:Lewis, U.J.: Bonewald, L.F.; Lewis, L.J.
Biochem. Biophys. Res. Commun. 92, 511-516, 1980
A>Title: The 20,000-dalton variant of human growth hormone: location of the amino acid
A:Reference number: A90217; MUID:80130196
A:Contents: somatotropin, 20K short variant
A:Accession: A90217
A:Molecule type: protein
A:Residues: 46-57,73-80 <EW>
R:Chapman, G.E., Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.; Ca
J. Biol. Chem. 256, 2353-2401, 1981
A>Title: The 20,000 molecular weight variant of human growth hormone. Preparation and sc
A:Reference number: A92311; MUID:81117361
A:Contents: somatotropin, 20K short variant
A:Accession: A92311
A:Molecule type: protein
A:Residues: 27-57,73-79 <HA>
R:Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.
J. Protein Chem. 2, 423-436, 1983
A>Title: Human growth hormone peptide 1-43: isolation from pituitary glands.
A:Reference number: A61466
A:Accession: A61466
A:Molecule type: protein
A:Residues: 27-69 <IN>
A>Note: Growth hormone 5K peptide has insulin potentiating activity; its physiological f
R:Robson, V.M.J.; Ree, I.D.; NG, F.
Biol. Chem. Hoppe-Seyler 371, 423-431, 1990
A>Title: Identification of the aspartilamide structure in a previously-reported peptide.
A:Reference number: S09685; MUID:90334745
A:Accession: S09685
A:Molecule type: protein
A:Residues: 27-34, 'I', 'V', '36-47 <OB>
R:de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.
Science 255, 306-312, 1992
A>Title: Human growth hormone and extracellular domain of its receptor: crystal structu
A:Reference number: A41728; MUID:92196577
A:Contents: annotation: X-ray crystallography, 2.8 angstroms
A>Note: the structure of the complex with growth hormone receptor is described
R:Gray, G.L.; Baldirige, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.
Gene 39, 247-254, 1985
A>Title: Periplasmic production of correctly processed human growth hormone in Escherich
A:Reference number: I41126; MUID:86137393
A:Accession: I84549
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-26 <RS>
A:Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159
C:Comment: The gene for this hormone is transcribed only in somatotrophic cells of the e
C:Comment: About 90% of somatotropin is the 22K long form.
C:Genetics:
A:Gene: GDB:GH1
A:Cross-references: GDB:119982; OMIM:139250
A:Map position: 17q23.1-17q23.3
A:Introns: 4/1: 57/3; 97/3; 152/3
C:Superfamily: prolactin
C:Keywords: alternative splicing; hormone; pituitary
F:1-26/DNA: signal sequence #status predicted <SIG>
F:27-217/Product: somatotropin 1, long form #status experimental <SOL>
F:27-69/Product: growth hormone 5K peptide #status experimental <SNP>
F:27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>
F:79-191,198-215/Disulfide bonds: #status experimental

Query Match 89.7%; Score 618; DB 1; Length 217;
Best Local Similarity 92.5%; Pred.No.4.5e-53;
Matches 124; Conservative 3; Mismatches 7; Indels 0; Gaps 0;

2 PPTPLSRFDNMALRRRLRYQLAYTFYQFEFAATLKQKYSFLQNPQISLCPSESIP 61
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
27 PPTPLSRFDNMALRRRLHQLAFDTYQFEFAATPEQKYSFLQNPQISLCPSESIP 86
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

OY 62 PSNRVTKQSKNELRLRISLLIQSMLEPVQLRSVFANSIYVGADSNVYRIKDLDEEG 121
||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : |||||
Db 87 PSNREFEQQKSNIPELLIRISILLIQSMLPEPVOFLASVFANSIYVGADSNVYDLDLDEBG 146

OY 122 IQTLMWRLEDGSPF 135
||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : |||||
Db 147 IQTLMGRLDGSSFR 160

RESULT 4
167410
somatotropin - rhesus macaque
N:Alternate names: growth hormone
C:Species: Macaca mulatta (rhesus macaque)
C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: 167410; A05094
R:Golios, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
A>Title: Cloning of four growth hormone/chorionic somatomotropin-related complemen
Endocrinology 133, 1744-1752, 1993
A>Title: Cloning of four growth hormone/chorionic somatomamotropin-related complemen
A:Reference number: 153267; MUID:94008724
A:Accession: 167409
A>Status: preliminary; translated from GB/EMBL/DDDBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>

A:Cross-references: GB:L16556; NID:g29j114; PIDN:AAI18842.1; PID:g29j115
R:L.I., C.H.; Chung, D.; Lamm, H.W.; Stein, S.
Arch. Biochem. Biophys. 245, 287-291, 1986
A>Title: The primary structure of monkey pituitary growth hormone.
A:Reference number: A05094; MUID:86129460
A:Accession: A05094
A:Molecule type: protein
A:Residues: 27-99, 'O', 101-178, 'D', 180-217 <LIC>
A>Note: the monkey species is not identified in the reference
R:Raben, M.S.
Science 125, 883-884, 1957
A>Title: Preparation of growth hormone from pituitaries of man and monkey.
A:Reference number: A44774
A:Contents: annotation; identification of source organism
C:Superfamily: prolactin

Query Match 85.9%; Score 592; Db 2; Length 217;
Best Local Similarity 89.6%; Pred. No. 1,6e-50;
Matches 120; Conservative 4; Mismatches 10; Indels 0; Gaps 0;

OY 2 FFTPLSLRPDMNLARRLYOLAYDYOEFEAVYLKEOKYSFLQNPRQSLCFSESIPF 61
||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : |||||
Db 27 FPIPLSRLPDMNLARRHRLHQALAPDTYGEFEAIIPREKQYSFLNQPNQRSCLFFSSIPT 86

OY 62 PSNRVKYQKSNLELRISILLIQSWLEPVQLNSVFANSIYVGADSNVYRIKLKLEEG 121
||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : |||||
Db 87 PSNREEFYQKSNLELRISILLIQSWLEPVQFLRSVFANSIYVTGYSDVYDKLKLEEG 146

OY 122 IQTLMWRLEDGSPF 135
||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : ||||| : |||||
Db 147 IQTLMGRLDGSSFR 160

RESULT 5
167409
chorionic somatomotropin-3 - Rhesus macaque
C:Species: Macaca mulatta (rhesus macaque)
C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999
C:Accession: 167409
R:Golios, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.
Endocrinology 133, 1744-1752, 1993
A>Title: Cloning of four growth hormone/chorionic somatomamotropin-related complemen
A:Reference number: 153267; MUID:94008724
A:Accession: 167409
A>Status: preliminary; translated from GB/EMBL/DDDBJ
A:Molecule type: mRNA
A:Residues: 1-217 <RES>

A:Cross-references: GB:L16554; NID:g293112; PIDN:AAA18840.1; PID:g293113
C:Superfamily: prolactin

Query Match 75.9%; Score 523; DB 2; Length 217;
Best Local Similarity 76.7%; Pred. No. 8.9e-44;
Matches 10; Conservative 16; Mismatches 15; Indels 0; Gaps 0;

OY 3 PTPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 62
DB 28 PSVPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 87
OY 63 SNRYKTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 122
DB 88 SNREYTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 147
OY 123 QTLMMRLDGSPPR 135
DB 148 ETLMMRLDGSPPR 160

RESULT 6

167408

Chorionic somatomammotropin-2 - rhesus macaque (fragment)

C:Species: Macaca mulatta (rhesus macaque)

C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999

C:Accession: 167408

R:Golof, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993

A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar

A:Reference number: 153267; MUID:94008724

A:Accession: 167408

A>Status: preliminary; translated from GB/EMBL/DDJ

A:Molecule type: mRNA

A:Residues: 1-212 <RES>

A:Cross-references: GB:L16553; NID:g293110; PIDN:AAA18840.1; PID:g293111

C:Superfamily: prolactin

Query Match 75.3%; Score 519; DB 2; Length 212;
Best Local Similarity 74.4%; Pred. No. 2.1e-43;
Matches 99; Conservative 20; Mismatches 14; Indels 0; Gaps 0;

OY 3 PTPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 62
DB 23 PSVPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 82
OY 63 SNRYKTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 122
DB 83 SNREYTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 142
OY 123 QTLMMRLDGSPPR 135
DB 143 ETLMMRLDGSPPR 155

RESULT 7

153267

Chorionic somatomammotropin-1 - rhesus macaque

C:Species: Macaca mulatta (rhesus macaque)

C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999

C:Accession: 153267

R:Golof, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993

A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar

A:Reference number: 153267; MUID:94008724

A:Accession: 153267

A>Status: preliminary; translated from GB/EMBL/DDJ

A:Molecule type: mRNA

A:Residues: 1-217 <RES>

A:Cross-references: GB:L16552; NID:g293108; PIDN:AAA18839.1; PID:g293109

C:Superfamily: prolactin

Query Match 75.3%; Score 519; DB 2; Length 217;
Best Local Similarity 74.4%; Pred. No. 2.2e-43;
Matches 99; Conservative 20; Mismatches 14; Indels 0; Gaps 0;

OY 3 PTPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 62
DB 28 PSVPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 87
OY 63 SNRYKTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 122
DB 88 SNREYTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 147
OY 123 QTLMMRLDGSPPR 135
DB 148 ETLMMRLDGSPPR 160

RESULT 8

167411

somatotropin - rhesus macaque

N:Alternate names: growth hormone

C:Species: Macaca mulatta (rhesus macaque)

C>Date: 31-May-1996 #sequence_revision 31-May-1996 #text_change 16-Jul-1999

C:Accession: 167411

R:Golof, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993

A:Title: Cloning of four growth hormone/chorionic somatomammotropin-related complemen

A:Reference number: 153267; MUID:94008724

A:Accession: 167411

A>Status: preliminary; translated from GB/EMBL/DDJ

A:Molecule type: mRNA

A:Residues: 1-217 <RES>

A:Cross-references: GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g293117

C:Superfamily: prolactin

Query Match 75.0%; Score 517; DB 2; Length 217;
Best Local Similarity 76.9%; Pred. No. 3.4e-43;
Matches 103; Conservative 14; Mismatches 17; Indels 0; Gaps 0;

OY 2 FTPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 61
DB 27 PSVPLSLRFDNMLRARRLYLADYDYQFEFEAYILKBOKYSFLQNPQTSICFSESIPTP 86
OY 62 PSNRKTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 121
DB 87 PSNRKTOOKSNLELRLISLLIOSMLPEVQLRSVFANSIYVYGAQSDSNVYRHLKDLDEGI 146
OY 122 QTLMMRLDGSPPR 135
DB 147 IOTLMRLDGSPPR 160

RESULT 9

167411

Chorionic somatomammotropin A precursor [validated] - human

N:Alternate names: chorionic somatomammotropin 1; placental lactogen

C:Species: Homo sapiens (man)

C>Date: 23-Oct-1981 #sequence_revision 23-Oct-1981 #text_change 08-Dec-2000

C:Accession: C32435; A94422; A93833; A93192; A90054; A94427; A61283; I55229;

R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barreira-Saldana, H.A.; Gellinas, R.E.; Seeburg,

Genomics 4, 479-497, 1989

A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A:Reference number: A32435; MUID:89307277

A:Accession: C32435

A:Molecule type: DNA

A:Residues: 1-217 <CHE>

A:Cross-references: GB:J03071; NID:g183148; PIDN:AA52551.1; PID:g183151

R:Goodman, H.M.; DeWoto, F.; Fiddes, J.C.; Halliwell, R.A.; Page, G.S.; Smith, S.; Ti

in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Josep

A:Reference number: A94422

A:Accession: A94422

A:Molecule type: mRNA
A:Residues: 1-217 <GCOO>
R:Itakaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shintzu, K.; Nagai, J.; Nakashima, Y. *Biochem. Int.* 16, 287-292, 1988
A:Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription was induced by prolactin
A:Accession number: I52342; MUID:88209096
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-3 <TAN>
A:Cross-references: GB:M35419; NID:g506822
R:Sherwood, L.M.; Burstein, Y.; Schechter, I. *Proc. Natl. Acad. Sci. U.S.A.* 76, 3819-3823, 1979
A:Title: Primary structure of the NH-2-terminal extra piece of the precursor to human placental lactogen
A:Reference number: A93833; MUID:80034970
A:Accession: A93833
A:Molecule type: protein
A:Residues: 1,3-26 <SHE>
A:Experimental source: Placenta
R:Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M. *Nature* 270, 494-499, 1977
A:Title: Construction and analysis of recombinant DNA for human chorionic somatomammotropin
A:Reference number: A93192; MUID:78071761
A:Accession: A93192
A:Molecule type: DNA
A:Residues: 50-217 <SHI>
A:Experimental source: placenta
R:Li, C.H.; Dixon, J.S.; Chung, D. *Arch. Biochem. Biophys.* 155, 95-110, 1973
A:Title: Amino acid sequence of human chorionic somatomammotropin.
A:Reference number: A90054; MUID:73201971
A:Accession: A90054
A:Molecule type: protein
A:Residues: 27-217 <LIC>
A:Experimental source: placenta
R:Nell, H.D. *In* Prolactin and Carcinogenesis. Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K., ed. In: The Chemistry of the human lactogenic hormones.
A:Title: The Chemistry of the human lactogenic hormones.
A:Reference number: A94427
A:Accession: A94427
A:Molecule type: protein
A:Residues: 27-217 <NIA>
A:Experimental source: placenta
R:Nic A Bhaird, N.; Tipton, K.F. *Biochem. Soc. Trans.* 19, 205, 1991
A:Title: Catechol-O-methyltransferase from human placenta: purification and some properties
A:Reference number: A61283; MUID:91244006
A:Accession: A61283
A:Molecule type: protein
A:Residues: 27-46 <NTC>
A:Note: Chorionlactotropin apparently copurified with placental catechol-O-methyltransferase
R:Sherwood, L.M.; Handwerker, S.; McLaurin, W.D.; Lanner, M. *Nature New Biol.* 233, 59-61, 1971
A:Title: Amino-acid sequence of human placental lactogen.
A:Reference number: A93401; MUID:72016313
A:Contents: annotation
R:Sherwood, L.M.; Handwerker, S.; McLaurin, W.D.; Lanner, M. *Nature New Biol.* 235, 64, 1972
A:Reference number: A93405
A:Contents: annotation
R:Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M. *J. Biol. Chem.* 254, 3782-3787, 1979
A:Title: Identification of the interchain disulfide bonds of dimeric human placental lactogen
A:Reference number: A92251; MUID:79172081
A:Contents: annotation; dimeric disulfide bonds
R:Selby, M.J.; Batta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L. *J. Biol. Chem.* 259, 13131-13138, 1984
A:Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two functional alleles
A:Reference number: I55229; MUID:85030426
A:Accession: I55229
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-217 <RES>

A:Cross-references: GB:K02401; NID:g181120; PIDN:AA52115.1; PID:g181121
R:Seeburg, P. H.; Shine, J.; Martial, J. A.; Ullrich, A.; Goodman, H.
Trans. Assoc. Am. Physicians 90, 109-116, 1977
A:Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.
A:Reference number: 159658; MUID:78160787
A:Accession: 159658
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 160-217 <RE2>
A:Cross-references: GB:M25118; NID:g181124; PIDN:AA35721.1; PID:g181125
C:Genetics:
A:Gene: GDB:CSH1
A:Cross-references: GDB:119084; OMIM:150200
A:Map position: 17q22-17q24
A:Introns: 4/1; 57/3; 97/3; 152/3
C:Superfamily: prolactin
C:Keywords: hormone; placenta
F:1-26/Domain: signal sequence #status experimental <SIG>
F:27-217/Product: chorionomotropin A #status experimental <MAT>
F:79-191/Disulfide bonds: #status experimental
F:208-215/Disulfide bonds: (in monomeric form) #status experimental
F:208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental
F:215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

	Query Match:	73.3%;	Score	505;	DB 1;	Length	217;	
	Best Local Similarity	76.5%;	Pred.	No. 5.1e-42;				
	Matches	101;	Conservative	13;	Mismatches	18;	Indels	0; Gaps
Oy	4	TTPSRLEFDNAMLRARLYOLAVDYQEEFEAYILKEQYSFLONPOTSICFSESIPPTPS	63					
		:						
Dd	29	TVPLSTRLEFDNAMOAHRAHQALADITYQEERFYIFPKDKYSEFLHDSOTSCFPDSTIPTPS	88					
		:						
Oy	64	NRYATQOOSWELLRLISLIIQSWEPVQLRVSFANSLVYGASDSNVYHLKLDLEEIGI	123					
		:						
Dd	89	NMEYQOOSMLRLIRLSLIIESMLEPVAFRLSKMFANLVYDTSDSDYAILKDLDEEGIQ	148					
		:						
Oy	124	TLMRLEDGSPR	135					
Dd	149	TLMRLEDGSSRR	160					

RESULT 10
E32435
chorionamniototropin B precursor - human
N:Alternate names: chorionic somatomamotropin 2
C:Species: Homo sapiens (man)
C:Date: 29-Dec-1989 #sequence_revision 29-Dec-1989 #text_change 16-Jul-1999
C:Accession: E32435
R:Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gellinas, R.E.; Seeburg
Genomics 4, 479-497, 1989
A:Title: The human growth hormone locus: nucleotide sequence, biology, and evolution
A:Reference number: A52455; MUID:89307277
A:Accession: E32435
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-217 <CHR>
A:Cross-references: GB:J03071; NID:g183148; PID:AAA52553.1; PID:g183153
C:Genetics:
A:Gene: GDB:CSH2
A:Cross-references: GDB:119813; OMTM:118820
A:Map position: 17q22-17q24
C:Superfamily: prolactin

```

QY      4  TIDSLRFLDPAAMRARRLTQQLADVTYDQEEFAYLIKEDKYSYFLDMPQTSICFSESIPPTS 63
      ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
db      29  TVPLSRFLDPAAMQARRHQLADVTYDQEEFETRYIPKDDKSYFLDSDSCFSDSPPTS 88
      ++++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|+++++|
Matches 101: Conservative 13; Mismatches 18; Indels 0; Gaps 0;

```

QY	64	NRYVTOOKSNMELLRISILLIQSLVEVOLRRSFANSLYYGASDNVYRHLKDLEGIQ	123
Dd	89	NMEETQKSNMELLRISILLIESLVEPRRLRSMFANMLYYDIDSDDYIILLLKDLEGIO	148
QY	124	TLMRRLDEGSFR	135
Dd	149	TLMGRLEDGSFR	160

RESULT 11
A26449
choriomamototropin precursor (allele hCS-3) - human
C:Species: Homo sapiens (man)
C:Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 28-Jul-1995
C:Accession: A26449
R:Hirt, H.; Kimmelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.; Bat
DNA 6, 59-70, 1987
A:Title: The human growth hormone gene locus: structure, evolution, and allelic variation
A:Reference number: A26449; MUID:87161235
A:Accession: A26449
A:Molecule type: DNA
A:Residues: 1-215 <HIR>
C:Superfamily: prolactin
F:1-26/Domain: signal sequence #status predicted <SIG>
F:27-215/Product: choriomamototropin, hCS-3 allele #status predicted <MAT>

Query Match 68.8%; Score 474; DB 2; Length 215;
Best Local Similarity 74.2%; Pred. NO. 5.5e-39;
Matches 98; Conservative 14; Mismatches 18; Indels 2; Gaps 2;

[illegible]

RESULT 12
B49159
somatotropin - golden hamster
N/Alternate names: growth hormone
C/Species: Mesocricetus auratus (golden hamster)
C/Date: 19-Dec-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
C/Accession: B49159
R/Southard, J.N.; Sanchez-Jimenez, F.; Campbell, G.T.; Talamantes, F.
Endocrinology 129, 2965-2971, 1991
A>Title: Sequence and expression of hamster prolactin and growth hormone messenger RNAs
A/Reference number: A49159; MUID:92063850
A/Accession: B49159
A/Status: preliminary
A/Molecule type: mRNA
A/Residues: 1216 <SOU>
A/Cross-references: GB:566299; NID:g239355; PIDN:AAB20368.1; PID:g239356
A/Note: Sequence extracted from NCBI backbone (NCBIN:66299, NCBIPI:66300)
A/Superfamily: prolactin

Query Match	62.0%;	Score 427;	DB 2;	Length 216;
Best Local Similarity	64.2%;	Pred. No. 2.2e-34;		
Matches	86;	Conservative	19;	Mismatches 27;
				Indels 2;
				Gaps 2;

[illegible]

Db 86 PTKKEAQRSMDELLRSLILIOSMIGPVOFLSRITNSLMGTSD-RVIEKLDKEEG 144
 Qy 122 IQTLMRLEDGSPR 135
 Db 145 IOALMOLELDGSPR 158

RESULT 13

STHO

somatotropin - horse

N:Alternate names: growth hormone

C:Species: *Equus caballus* (domestic horse)

C:Date: 13-Jul-1981 #sequence_revision 13-Jul-1981 #text_change 23-Aug-1996

C:Accession: A91772; A91395; A91383; A90240; A01514

R:Zaklin, M.M.; Poskus, E.; Langton, A.A.; Ferrara, P.; Santome, J.A.; Dellacha, J.N.

Int. J. Pept. Protein Res. 8, 435-444, 1976

A:Title: Primary structure of equine growth hormone.

A:Reference number: A91772; MUID:77005410

A:Accession: A91772

A:Molecule type: protein

A:Residues: 1-190 <ZAK>

R:Zaklin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.

FEBS Lett. 34, 353-355, 1973

A:Title: The amino acid sequence of equine growth hormone.

A:Reference number: A91395; MUID:74020362

A:Accession: A91395

A:Molecule type: protein

A:Residues: 1-190 <ZAK>

R:Zaklin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.

FEBS Lett. 25, 77-82, 1972

A:Title: Amino acid sequences around the cystine residues in equine growth hormone

A:Reference number: A91383

A:Accession: A91383

A:Molecule type: protein

A:Residues: 42-69;157-190 <ZAK>

Biochem. J. 109, 19-24, 1968

A:Title: Amino acid sequences around the cystine residues in horse growth hormone.

A:Reference number: A90240; MUID:68368390

A:Accession: A90240

A:Molecule type: protein

A:Residues: 176-190 <OLIV>

C:Superfamily: prolactin

C:Keywords: hormone; pituitary

;52-163;180-186/Disulfide bonds: #status experimental

Query Match	61.7%;	Score 425;	DB 1;	Length 190;
Best Local Similarity	64.9%;	Pred. No. 2.9e-34;		
Matches	87;	Conservative	18;	Mismatches 27;
			Indels	2;
			Gaps	2;

[illegible]

```

RESULT 14
PN0140
somatotropin - sei whale
N:Alternate names: growth hormone
C:Species: Balaenoptera borealis (sei whale)
C:Date: 07-May-1993 #sequence-revision 07-May-1993 #text-change 07-May-1999
C:Accession: PN0140
C:Update, N.A.: Pankov, Y.A.; Bulatov, A.A.; Osipova, T.A.

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	CC	or send an email to license@ib-sib.ch).	
CC			
DR	EMBL, K004470; AAA98619.1; -		
DR	EMBL, J03576; AAB59548.1; -		
DR	EMBL, J03071; AAA52552.1; -		
DR	EMBL, M38451; AAA35891.1; -		
DR	PIR; A01511; SFHDV.		
DR	PIR; B28072; B28072.		
DR	PIR; D32435; D32435.		
DR	HSSP; P01241; IHWH.		
DR	MIM; I39240; -		
DR	InterPro; IP001400; SOMATOTROPIN.		
DR	Pfam; PF00103; hormone; 1		
DR	PRINTS; PRO0836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN.1; 1.		
DR	PROSITE; PS00338; SOMATOTROPIN.2; 1.		
KW	Hormone; Placenta; Signal; Glycoprotein; Alternative splicing.		
FT	SIGNAL	1	26
FT	CHAIN	27	217
FT	DISULFID	79	191
FT	DISULFID	208	215
FT	CARBOHYD	166	166
FT	CONFLICT	35	35
FT	CONFLICT	109	109
FT	SEQUENCE	217 AA; 24987 MW; 40FE8620A5138D1C CRC64;	

Query Match	98.5%	Score 679	DB 1	length 217
Best Local Similarity	99.3%	Pred. No. 1.7e-60		
Matches 133	Conservative	0	Mismatches 1	Indels 0
				Gaps 0

QY	2	FPPTPLSRFLPDNAMLRRRLRYOLAVDYTOEEFEAYILKEQKYSPFLQNPQSLCFSESIP	61
Db	27	FPPTPLSRFLPDNAMLRRRLRYOLAVDYTOEEFEAYILKEQKYSPFLQNPQSLCFSESIP	86
QY	62	PSNNVKTQOKQSNLELLRISILLIQSLVEPVQLRSVPFANSLVYGASDSNNYRHLKDLDEG	121
Db	87	PSNNVKTQOKQSNLELLRISILLIQSLVEPVQLRSVPFANSLVYGASDSNNYRHLKDLDEG	146
QY	122	IQTLMRLEDGSPR	135
Db	147	IQTLMRLEDGSPR	160

RESULT	2
SOMM_HUMAN	STANDARD
ID	PRT
AC	256 AA.
DT	01-MAR-1989 (Rel. 10, Created)
DT	01-MAR-1989 (Rel. 10, Last sequence update)
DT	16-OCT-2001 (Rel. 40, Last annotation update)
DE	Growth hormone variant II precursor (GH-V2).
GN	GH2.
OS	Homo sapiens (Human).
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC	Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
OX	NCBI_TaxID=9606;
RN	[1]
RP	SEQUENCE FROM N.A.
RX	MEDLINE=89307277; PubMed=2744760;
RA	Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
RA	Gelinas R.E., Seeburg P.H.;
RT	"The human growth hormone locus: nucleotide sequence, biology, and
RT	evolution."
RL	Genomics 4:479-497(1989).
RN	[2]
RP	SEQUENCE FROM N.A.
RX	MEDLINE=88243769; PubMed=3379057;
RA	Cooke N.E., Ray J., Emery J.G., Liebhauer S.A.;
RT	"Two distinct species of human growth hormone variant mRNA in the
RT	human placenta predict the expression of novel growth hormone
RT	proteins."
RL	J. Biol. Chem. 263:9001-9006(1988).

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CC -1- SUBCELLULAR LOCATION: secreted.
CC -1- ALTERNATIVE PRODUCTS: TWO GROWTH HORMONE VARIANTS ARE PRODUCED BY
CC ALTERNATIVE SPLICING OF THE SAME GENE.
CC -1- MISCELLANEOUS: THE C-TERMINAL REGION OF THIS PROTEIN IS DIFFERENT
CC FROM THAT OF ALL OTHERS PROTEINS OF THIS FAMILY.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: J03756; AAB59547.1; -.
DR PIR: A28072; A28072.
DR HSPR: P01241; INHW.
DR MIM: 139240; -.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR ProSITE: PS00266; SOMATOTROPIN_1; 1.
DR ProSITE: PS00338; SOMATOTROPIN_2; FALSE_NEG.
KW Hormone; Placenta; Signal; Alternative splicing.
FT SIGNAL 1 26
FT CHAIN 27 256 GROWTH HORMONE VARIANT II.
FT CONFLICT 237 240 AEAG -> EMGR (IN REF. 2).
SQ SEQUENCE 256 AA; 28778 MW; 4605AD39EBC44F6 CRC64;
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Query Match	93.1%	Score 641.5	DB 1	Length 256
Best Local Similarity	95.5%	Pred. No. 1.1e-56		
Matches 128	Conservative	1	Mismatches 4	Indels 1
				Gaps 1
OY	2	FPPIPSRLDNLMLRRLRYOLAVDYTOQEEEAATLKEOKSPLONPQTSLOCFSESIP	61	
Db	27	FPPIPSRLPDNLMLRRLRYQLAVDYTOQEEEAATLKEOKSPLONPQTSLOCFSESIP	86	
OY	62	PSNRVKTQOKSNLELLRISLLIQSWLEPVOLLSVANSLSYVGASDSNRYRLKLEEG	121	
Db	87	PSNRVKTQOKSNLELLRISLLIQSWLEPVOLLSVANSLSYVGASDSNRYRLKLEEG	146	
OY	122	IQTLMW-RLDGGSP 134		
Db	147	IQTLMWRYRVPATIP 160		
RESULT	3			
SOMA_HUMAN				
ID	SOMA_HUMAN	STANDARD:	PRT:	217 AA.
AC	P01241:			
DT	21-JUL-1986 (Rel. 01, Created)			
DT	01-MAR-1992 (Rel. 21, Last sequence update)			
DT	16-OCT-2001 (Rel. 40, Last annotation update)			
DE	Somatotropin precursor (Growth hormone).			
GN	GHI.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominiidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=82014939; PubMed=6269091;			
RA	Denoto F.M., Moore D.D., Goodman H.M.;			
RT	"Human growth hormone DNA sequence and mRNA structure: possible			
RT	alternative splicing.";			
RL	Nucleic Acids Res. 9:3719-3730(1981).			
RN	[2]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=80034477; PubMed=386281;			
RA	Roskam W., Rougeon F.;			
RT	"Molecular cloning and nucleotide sequence of the human growth			
RT	hormone structural gene.";			

RL Nucleic Acids Res. 7:305-320(1979).
 RN [3]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=79203293; PubMed=377496;
 RA Martell J.A., Hallewell R.A., Baxter J.D., Goodman H.M.;
 RT "Human growth hormone: complementary DNA cloning and expression in
 bacteria.";
 RL Science 205:602-607(1979).
 RN [14]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,
 RA Gellinas R.E., Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 evolution.";
 RL Genomics 4:479-497(1989).
 RN [15]
 RP SEQUENCE OF 27-217.
 RX MEDLINE=69289202; PubMed=5810834;
 RA Li C.H., Dixon J.S., Liu W.-K.;
 RT "Human pituitary growth hormone. XIX. The primary structure of the
 hormone.";
 RL Arch. Biochem. Biophys. 133:70-91(1969).
 RN [6]
 RP SEQUENCE OF 27-217, AND REVISIONS.
 RX MEDLINE=72143935; PubMed=5144027;
 RA Li C.H., Dixon J.S.;
 RT "Human pituitary growth hormone. 32. The primary structure of the
 hormone: revision.";
 RL Arch. Biochem. Biophys. 146:233-236(1971).
 RN [17]
 RP SEQUENCE OF 27-51 AND 104-120.
 RX MEDLINE=71139765; PubMed=5279046;
 RA Nall H.D.;
 RT "Revised primary structure for human growth hormone.";
 RL Nature New Biol. 230:90-91(1971).
 RN [8]
 RP REVISION.
 RX MEDLINE=73092028; PubMed=4675454;
 RA Bewley T.A., Dixon J.S., Li C.H.;
 RT "Sequence comparison of human pituitary growth hormone, human
 chorionic somatomammotropin, and ovine pituitary growth and
 lactogenic hormones.";
 RL Int. J. Pept. Protein Res. 4:281-287(1972).
 RN [9]
 RP REVISION.
 RA Nall H.D.;
 RT "The chemistry of the human lactogenic hormones.";
 RL (In) Griffiths K. (eds.):
 RL Prolactin and carcinogenesis. Proc. fourth tenovus workshop prolactin,
 RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).
 RN [10]
 RP REVISIONS TO 119-120 AND 157-159.
 RX MEDLINE=71153968; PubMed=5279528;
 RA Nall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;
 RT "Sequences of pituitary and placental lactogenic and growth hormones:
 evolution from a primordial peptide by gene reduplication.";
 RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).
 RN [11]
 RP SEQUENCE OF 27-57 AND 73-79.
 RX MEDLINE=81117361; PubMed=7462247;
 RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,
 RA Turner C., Cary P.D., Crane-Robinson C.;
 RT "The 20,000 molecular weight variant of human growth hormone.
 Preparation and some physical and chemical properties.";
 RL J. Biol. Chem. 256:2395-2401(1981).
 RN [12]
 RP SEQUENCE OF 46-57 AND 73-80.
 RX MEDLINE=80130196; PubMed=7356479;
 RA Lewis U.J., Bonewald L.F., Lewis L.J.;
 RT "The 20,000-dalton variant of human growth hormone: location of the
 amino acid deletions.";
 RL Biochem. Biophys. Res. Commun. 92:511-516(1980).

RN [13]
 RP 3D-STRUCTURE MODELING.
 RX MEDLINE=88190073; PubMed=3447173;
 RA Cohen F.E., Kuntz I.D.;
 RT "Prediction of the three-dimensional structure of human growth
 hormone.";
 RL Proteins 2:162-166(1987).
 RN [14]
 RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).
 RX MEDLINE=92196577; PubMed=1549776;
 RA de Vos A.M., Ultsch M., Kossiakoff A.A.;
 RT "Human growth hormone and extracellular domain of its receptor:
 crystal structure of the complex.";
 RL Science 255:306-312(1992).
 RN [15]
 RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).
 RX MEDLINE=95075462; PubMed=7984244;
 RA Somers W., Ultsch M., de Vos A.M., Kossiakoff A.A.;
 RT "The X-ray structure of a growth hormone-prolactin receptor complex.";
 RL Nature 372:478-481(1994).
 RN [16]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
 RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,
 RA Pavlovsk A.G., Wlodawer A.;
 RT "The crystal-structure of wild-type growth-hormone at 2.5-A
 resolution.";
 RL Protein Pept. Lett. 2:333-340(1995).
 RN [17]
 RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
 RX MEDLINE=97113023; PubMed=8943276;
 RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,
 RA Norstedt G.;
 RT "Crystal structure of an antagonist mutant of human growth hormone,
 G120R, in complex with its receptor at 2.9-A resolution.";
 RL J. Biol. Chem. 271:32197-32203(1996).
 CC -I- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
 CONTROL.
 CC -I- SUBCELLULAR LOCATION: Secreted.
 CC -I- ALTERNATIVE PRODUCTS: A 20 kDa SHORT VARIANT WHICH LACKS 58-72 IS
 CC PRODUCED AS THE RESULT OF SPLICING AT THE ALTERNATE JUNCTION
 CC OF THE SECOND INTRON.
 CC -I- DISEASE: DEFECTS IN GH1 ARE A CAUSE OF PITUITARY DWAFFISM I AND
 CC IV.
 CC -I- PHARMACEUTICAL: Available under the names Nutropin or Protropin
 CC (Genentech), Norditropin (Novo Nordisk), Genotropin (Pharmacia
 CC Upjohn), Humatrope (Eli Lilly) and Saizen or Serostim (Sero) .
 CC Used for the treatment of growth hormone deficiency and for
 CC Turner's syndrome.
 CC -I- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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 CC -----
 CC EMBL, V00519; CAA23778.1; -;
 CC EMBL, J03071; AAA52549.1; -;
 CC EMBL, M13438; AAA98618.1; -;
 CC EMBL, A12770; CAA01057.1; -;
 CC EMBL, A00469; CAA00065.1; -;
 CC PIR, A01510; STH0.
 CC PIR, A32435; A32435.
 CC PDB, 3HHR; 30-APR-94.
 CC PDB, 1HWJ; 31-JAN-94.
 CC PDB, 1HGU; 07-DEC-95.
 CC PDB, 1HWG; 19-NOV-97.
 CC PDB, 1HHW; 19-NOV-97.
 CC PDB, 1AXI; 28-JAN-98.
 CC PDB, 1A22; 29-APR-98.
 CC PDB, 1BP3; 23-SEP-98.

DR MIM; 139250; -
DR MIM; 262400; -
DR MIM; 262650; -
DR InterPro: IPR001400: SOMATOTROPIN.
DR Pfam: PF00103: hormone: 1.
DR PRINTS: PR00836: SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Pituitary; Hormone; Alternative splicing; Signal; 3D-structure;
KW Dwarfism; Pharmaceutical; Polymorphism.
FT SIGNAL 1 26
FT CHAIN 27 217
FT DISULFID 79 191
FT DISULFID 208 215
FT VARSPLC 58 72
FT VARIANT 3 3
FT VARIANT 105 105
FT VARIANT 136 136
FT HELIX 32 61
FT HELIX 64 72
FT TURN 76 77
FT TURN 80 83
FT HELIX 90 94
FT TURN 95 95
FT HELIX 98 110
FT TURN 111 114
FT HELIX 115 125

Query Match 89.7%; Score 618; DB 1; Length 217;

Best Local Similarity 92.5%; Pred. No. 2e-54; Mismatches 14; Conservative 3; Indels 0; Gaps 0;

QY 2 FPTPLSRLEFDNMLRARLYOLADYDYOEFEEAYILKEOKYSFLONPOTSICFSES IPT 61
DB 27 FPTPLSRLEFDNMLRARLYOLADYDYOEFEEAYILKEOKYSFLONPOTSICFSES IPT 86
QY 62 PSNRVKTQOKSNLELLRISLLIQSWLEPVQLRSVANSLSVYGASDSNVYRHKLDEEG 121
DB 87 PSNRVKTQOKSNLELLRISLLIQSWLEPVQLRSVANSLSVYGASDSNVYRHKLDEEG 146
QY 122 IOTLMRLDEGSPR 135
DB 147 IOTLMRLDEGSPR 160

RESULT 4

SOMA_SAIBB STANDARD: PRT: 217 AA.

AC P58343;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DE 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHL.
OS Saimiri boliviensis boliviensis (Bolivian squirrel monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Saimiri.
OX NCBI_TaxID=39432;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21265430; PubMed=11371582;
RA Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;
RT "Epistatic evolution of growth hormone in primates and emergence of the
RT species specificity of human growth hormone receptor.";
RL Mol. Biol. Evol. 18:945-953(2001).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: AF339060; AAK62287.1; -
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; Pituitary; Signal.
FT SIGNAL 1 26
FT CHAIN 27 217
FT DISULFID 79 191
FT DISULFID 208 215
SQ SEQUENCE 217 AA; 24864 MW; 9515289992052977 CRC64;

Query Match 86.1%; Score 593; DB 1; Length 217;

Best Local Similarity 86.6%; Pred. No. 6.1e-52; Mismatches 116; Conservative 10; Mismatches 8; Indels 0; Gaps 0;

QY 2 FPTPLSRLEFDNMLRARLYOLADYDYOEFEEAYILKEOKYSFLONPOTSICFSES IPT 61
DB 27 FPTPLSRLEFDNMLRARLYOLADYDYOEFEEAYILKEOKYSFLONPOTSICFSES IPT 86
QY 62 PSNRVKTQOKSNLELLRISLLIQSWLEPVQLRSVANSLSVYGASDSNVYRHKLDEEG 121
DB 87 PSNRVKTQOKSNLELLRISLLIQSWLEPVQLRSVANSLSVYGASDSNVYRHKLDEEG 146
QY 122 IOTLMRLDEGSPR 135
DB 147 IOTLMRLDEGSPR 160

RESULT 5

SOMA_MACMU STANDARD: PRT: 217 AA.

AC P33093;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 01-FEB-1996 (Rel. 33, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHL.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
RN [2]
RP SEQUENCE OF 27-217.
RX MEDLINE=66129460; PubMed=3080959;
RA Li C.H., Chung D., Lahm H.W., Stein S.;
RT "The primary structure of monkey pituitary growth hormone.";
RL Arch. Biochem. Biophys. 245:287-291(1986).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: L16556; AAA18842.1; -.
DR PIR: A05094; A05094.
DR HSSP: P01241; 1HWG.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KM Hormone; pituitary; Signal.
FT SIGNAL 1
FT CHAIN 27 217 SOMATOTROPIN.
FT DISULFID 79 191 BY SIMILARITY.
FT DISULFID 208 215 BY SIMILARITY.
FT CONFLICT 100 100 E -> Q (IN REF. 2).
FT CONFLICT 179 179 N -> D (IN REF. 2).
SQ SEQUENCE 217 AA; 24913 MW; 2C5180341EBC46D0 CRC64;

Query Match 85.9%; Score 592; DB 1; Length 217;
Best Local Similarity 89.6%; Pred. No. 7.6e-52;
Matches 120; Conservative 4; Mismatches 10; Indels 0; Gaps 0;

QY 2 FPTPLSLRFDNAMLRAHRLYOLADTYQEFEEAYILKEQKYSFLONPOTSLSSESIP 61
   |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db 27 FPTPLSLRFDNAMLRAHRLYOLADTYQEFEEAYILKEQKYSFLONPOTSLSSESIP 86

QY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSLVYGASDSNYYRLKLEEG 121
   |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db 87 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSLVYGASDSNYYRLKLEEG 146

QY 122 IOTLMGRLEDSGSPR 135
   |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db 147 IOTLMGRLEDSGSSR 160

RESULT 6
SOMA_CALJA STANDARD; PRT; 217 AA.
AC O9GMB3;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1.
OS Callithrix jacchus (Common marmoset).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.
OX NCBI_TaxID=9483;
RN [1]
RP SEQUENCE FROM N.A.
RA Wallis O.C., Wallis M.;
RT "Cloning and characterisation of a putative growth hormone encoding
RT gene from the marmoset (Callithrix jacchus).";
RU Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
DR EMBL: AJ297563; CAC03481.1; -.
DR InterPro: IPR001400; SOMATOTROPIN.

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DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KM Hormone; pituitary; Signal.
FT SIGNAL 1
FT CHAIN 27 217 BY SIMILARITY.
FT DISULFID 79 191 SOMATOTROPIN.
FT DISULFID 208 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24959 MW; E102151A12CE6192 CRC64;

Query Match 85.5%; Score 589; DB 1; Length 217;
Best Local Similarity 85.8%; Pred. No. 1.5e-51;
Matches 115; Conservative 10; Mismatches 9; Indels 0; Gaps 0;

QY 2 FPTPLSLRFDNAMLRAHRLYOLADTYQEFEEAYILKEQKYSFLONPOTSLSSESIP 61
   |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db 27 FPTPLSLRFDNAMLRAHRLYOLADTYQEFEEAYILKEQKYSFLONPOTSLSSESIP 86

QY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSLVYGASDSNYYRLKLEEG 121
   |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db 87 PSNRVKTQOKSNLELLRLISLLIQSWLEPVQLRSVFANSLVYGASDSNYYRLKLEEG 146

QY 122 IOTLMGRLEDSGSPR 135
   |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||  |||||
Db 147 IOTLMGRLEDSGSPR 160

RESULT 7
SOMV_MACMU STANDARD; PRT; 217 AA.
ID SOMV_MACMU
AC Q07370; Q28494;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 35, Last annotation update)
DE Growth hormone variant I precursor (GH-V) (Placenta-specific growth
DE hormone).
GN GH2.
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecinae; Macaca.
OX NCBI_TaxID=9544;
RN [1]
RP SEQUENCE FROM N.A.
RA Golos T.G.;
RU Submitted (JAN-1994) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
KC TISSUE=Placenta;
RX MEDLINE=94008724; PubMed=8404617;
RX Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomammotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RU Endocrinology 133:1744-1752(1993).
CC -1- SUBCELLULAR LOCATION: Secreted (By similarity).
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC -----
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CC or send an email to license@isb-sib.ch).
CC -----
DR EMBL: U02293; AAA03391.1; -.
DR EMBL: L16555; AAA20180.1; -.
DR HSSP: P01241; 1HWG.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.

```


FT	CHAIN	27	216	SOMATOTROPIN.
FT	DISULEPID	78	189	BY SIMILARITY.
FT	DISULEPID	206	214	BY SIMILARITY.
SO	SEQUENCE	216 AA;	24690 MM;	3B69CE32AB6F1166 CRC64;
Query Match 62.0%; Score 427; DB 1; Length 216;				
Best Local Similarity 64.2%; Pred. No. 1,9e-35;				
Matches 86; Conservative 19; Mismatches 27; Indels 2; Gaps 2;				
QY	2 PPTPTSLRLPDNMLARLYOLAVDTYOEFPEAYILKEOKYSPLONPOTSLCFSESIP 61			
Db	27 PPAAPLSSLEFANVLAQAHQHLQADDTKEFRRAVTPGCQRTS-IQAQAQAFPFSETIRA 85			
QY	62 PSNRVKTOOKSNLELRISLLIOSMLEPVOLLRSVFANSLVGASDSNYYRHLKDLERG 121			
Db	86 PTCGEAAQGSQSDMELRFSLLILIOSLGPVQPLSRIFNLSMFTSD-RYEKTKDLERG 144			
QY	122 IQLLMRLEDGSPR 135			
Db	145 IQALMQLLEDGSPR 158			
RESULT	10			
SOMA_HORSE	STANDARD; PRT; 216 AA.			
AC	P01245;			
DT	21-JUL-1986 (Rel. 01, Created)			
DT	01-NOV-1995 (Rel. 32, Last sequence update)			
DT	01-FEB-1996 (Rel. 33, Last annotation update)			
DE	Somatotropin precursor (Growth hormone).			
GN	GH1.			
OS	Equus caballus (Horse).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Perissodactyla; Equidae; Equus.			
OX	NCBI_TaxID=9796;			
RP	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=Plutitary;			
RX	MEDLINE=9426171; PubMed=8206392;			
RA	Ascasio-Martinez J.A., Barrera-Saldana H.A.;			
RT	"Sequence of a cDNA encoding horse growth hormone.";			
RL	Gene 143:299-300(1994).			
RN	[2]			
RP	SEQUENCE OF 27-216.			
RX	MEDLINE=77005410; PubMed=965151;			
RA	Zakin M.M., Poskus E., Langton A.A., Ferrara P., Santome J.A.,			
RA	Dellaacha J.M., Paladini A.C.;			
RT	"Primary structure of equine growth hormone.";			
RL	Int. J. Pept. Protein Res. 8:435-444(1976).			
RN	[3]			
RP	PRELIMINARY SEQUENCE OF 27-216.			
RX	MEDLINE=74020362; PubMed=4747849;			
RA	Zakin M.M., Poskus E., Dellaacha J.M., Paladini A.C., Santome J.A.;			
RT	"The amino acid sequence of equine growth hormone.";			
RL	FEBS Lett. 34:353-355(1973).			
RN	[4]			
RP	SEQUENCE OF 68-95 AND 183-216.			
RA	Zakin M.M., Poskus E., Dellaacha J.M., Paladini A.C., Santome J.A.;			
RT	"Amino acid sequences around the cystine residues in equine growth			
RL	hormone.";			
RL	FEBS Lett. 25:77-82(1972).			
RP	[5]			
RP	SEQUENCE OF 202-216.			
RX	MEDLINE=68368390; PubMed=4876100;			
RA	Oliver L., Hartree A.S.;			
RA	"Amino acid sequences around the cystine residues in horse growth			
RT	hormone.";			
RL	Biochem. J. 109:19-24(1968).			
CC	I- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH			
CC	CONTROL.			
CC	I- SUBCELLULAR LOCATION: Secreted.			
CC	I- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.			

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CC EMBL: 002929; AAA21027.1; -
CC PIR: A01514; STHO.
CC HSSP: P01246; 1B8T.
CC InterPro: IPR001400; SOMATOTROPIN.
CC Pfam: PF00103; hormone; 1.
CC PRINTS: PR00836; SOMATOTROPIN.
CC PROSITE: PS00266; SOMATOTROPIN_1; 1.
CC PROSITE: PS00338; SOMATOTROPIN_2; 1.
CC Hormone; Pituitary; Signal.
CC SIGNAL 1 26
CC CHAIN 27 216 SOMATOTROPIN.
CC FT DISULFID 78 189
CC FT DISULFID 206 214
CC SEQUENCE 216 AA; 24423 MW; 37AB3173834D11AC CRC64;
SO

Query Match 61.7%; Score 425; DB 1; Length 216;
Best Local Similarity 64.9%; Pred. No. 3e-35;
Matches 87; Conservative 18; Mismatches 27; Indels 2; Gaps 2;

QY 2 FPTPLSLRFLPDNMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSCLFSSESIPY 61
DB 27 FPMPLSLFLFANAVLRQHLHQLADTYKEFERAYIPEGQRS-IGNMAACFCFSETIPA 85
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPQLRSVFANSLYVGASDSNYYRHKLDEEG 121
DB 86 PTKDEAQQRSDVELLRSLILQSWLGPVQLLSRYFTNSLVFGTSD-RVYEKLRLEEG 144
QY 122 IQTLMWRLEDEGSPR 135
DB 145 IQALMRELEDEGSPR 158
RESULT 11
SOMA_BALBO STANDARD: PRT; 190 AA.
AC P33092;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1993 (Rel. 27, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin (Growth hormone).
GN GH1.
OS Balenoptera borealis (Sei whale).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;
OC Balenopteridae; Balenoptera.
OX NCBI_TaxID=9768;
RN [1]
RP SEQUENCE.
RA MEDLINE=83000569; PubMed=7115813;
RT Yudev N.A., Pankov Y.A., Bulatov A.A., Osipova T.A.;
RL "Amino acid sequence of sei whale somatotropin.",
RL Biochimica 47:1059-1069(1982).
RN [2]
RP PRELIMINARY PARTIAL SEQUENCE.
RA Osipova T.A., Bulatov A.A., Pankov Y.A.;
RT "Structural studies of tryptic peptides from large cyanogen bromide
RT fragments of sei whale (Balenoptera borealis) somatotropin.",
RL Bioorg. Khim. 4:1589-1599(1978).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
CC PIR: PNO140; PNO140.

DR PIR: JNO387; JNO387.
DR HSSP: P01246; 1B8T.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
DR Hormone; Pituitary.
KW Hormone; Pituitary.
FT DISULFID 52 163
FT DISULFID 180 188 BY SIMILARITY.
SO SEQUENCE 190 AA; 21635 MW; 09FBEF6B1A75D6 CRC64;

Query Match 61.5%; Score 424; DB 1; Length 190;
Best Local Similarity 64.9%; Pred. No. 3.3e-35;
Matches 87; Conservative 18; Mismatches 27; Indels 2; Gaps 2;

QY 2 FPTPLSLRFLPDNMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNPQTSCLFSSESIPY 61
DB 1 FPMPLSLFLFANAVLRQHLHQLADTYKEFERAYIPEGQRY-FLQNAOSTGCFSEVIPP 59
QY 62 PSNRVKTQOKSNLELRISLLIQSWLEPQLRSVFANSLYVGASDSNYYRHKLDEEG 121
DB 60 PANKDEAQQRSDVELLRSLILQSWLGPVQLLEKAIANELVFSTSD-RVYEKLRLEEG 118
QY 122 IQTLMWRLEDEGSPR 135
DB 119 IQALMRELEDEGSPR 132

RESULT 12
SOMA_NYCPY STANDARD: PRT; 217 AA.
AC 09GMB2;
DT 01-MAR-2002 (Rel. 41, Created)
DT 01-MAR-2002 (Rel. 41, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1.
OS Nycticebus pygmaeus (Pygmy slow loris).
OC Eukaryota; Metazoa; Chordata; Cranialia; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Strepsirhini; Loridae; Nycticebus.
OX NCBI_TaxID=101278;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Liver;
RA Wallis O.C., Zhang Y.P., Wallis M.;
RT "Cloning and characterisation of the gene encoding slow loris growth
RT hormone.",
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

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CC EMBL: AJ297562; CAC03504.1; -
CC InterPro: IPR001400; SOMATOTROPIN.
CC Pfam: PF00103; hormone; 1.
CC PRINTS: PR00836; SOMATOTROPIN.
CC PROSITE: PS00266; SOMATOTROPIN_1; 1.
CC PROSITE: PS00338; SOMATOTROPIN_2; 1.
CC Hormone; Pituitary; Signal.
CC SIGNAL 1 27
CC CHAIN 28 217 BY SIMILARITY.
CC FT DISULFID 79 190 SOMATOTROPIN.
CC BY SIMILARITY.

FT DISUFID 207 215 BY SIMILARITY.
SQ SEQUENCE 217 AA; 24395 MM; 7FE90D77E59085F6 CRC64;

Query Match 61.5%; Score 424; DB 1; Length 217;
Best Local Similarity 65.7%; Pred. No. 3.9e-35;
Matches 88; Conservative 16; Mismatches 28; Indels 2; Gaps 2;

QY 2 FPTIPLSRLEFDNMLRARRLYQLAYDTYQFEFEAYILKEOKYSFLONPQTSICFSES IPT 61
DB 28 FPMPLSSLEFANAVLAQHQLHQAADTYKEFEERAYIPEGQORS-IQNAQAACFSETIYA 86
QY 62 PSNRVATQOKSNELLIRISILLIQSWLEVPQILRSFANSVLYGASDSNVYRHKLDEEG 121
DB 87 PTGKDAQOQRSDMLLRFSILLIQSWLGPVOLLRSVFTNSLVGTSD-RVYEKRLDLEEG 145
QY 122 IOTLMWLEDEGSPR 135
DB 146 IOTLMWLEDEGSPR 159

RESULT 13
SOMA_LOXAF
ID SOMA_LOXAF STANDARD; PRT; 190 AA.
AC P20392;
DT 01-FEB-1991 (Rel. 17, Created)
DT 01-FEB-1991 (Rel. 17, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Somatotropin (Growth hormone).
GN GH1.
OS Loxodonta africana (African elephant).
OC Eukaryota; Metazoa; Chordata; Cranialata; Euteleostomi;
OC Mammalia; Eutheria; Proboscidea; Elephantidae; Loxodonta.
OX NCBI_TaxID=9785;
RN [1]
RP SEQUENCE.
RA Hulmes J.D., Miedel M.C., Li C.H., Pan Y.C.E.;
RT "Primary structure of elephant growth hormone."
RL Int. J. Pept. Protein Res. 33:368-372(1989)
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR PIR: J02219; J02219.
DR HSSP: P01246; 1BSP.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; pituitary.
FT DISUFID 52 163 BY SIMILARITY.
FT DISUFID 180 188 BY SIMILARITY.
SQ SEQUENCE 190 AA; 21761 MM; 05B860813DB741F2 CRC64;

Query Match 61.4%; Score 423; DB 1; Length 190;
Best Local Similarity 64.9%; Pred. No. 4.1e-35;
Matches 87; Conservative 17; Mismatches 28; Indels 2; Gaps 2;

QY 2 FPTIPLSRLEFDNMLRARRLYQLAYDTYQFEFEAYILKEOKYSFLONPQTSICFSES IPT 61
DB 1 FPMPLSSLEFANAVLAQHQLHQAADTYKEFEERAYIPEGQORS-IQNAQAACFSETIYA 59
QY 62 PSNRVATQOKSNELLIRISILLIQSWLEVPQILRSFANSVLYGASDSNVYRHKLDEEG 121
DB 60 PTGKDAQOQRSDMLLRFSILLIQSWLGPVOLLRSVFTNSLVGTSD-RVYEKRLDLEEG 118
QY 122 IOTLMWLEDEGSPR 135
DB 119 IOTLMWLEDEGSPR 132

RESULT 14
SOMA_CANFA
ID SOMA_CANFA STANDARD; PRT; 216 AA.
AC P33711; O9TOR6;
DT 01-FEB-1994 (Rel. 28, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GH1 OR GH.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Cranialata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP SEQUENCE FROM N.A.
RA MEDLINE=94266166; PubMed=8206387;
RX Ascacio-Martinez J.A., Barrera-Saldana H.A.;
RT "A dog growth hormone cDNA codes for a mature protein identical to pig growth hormone";
RL Gene 143:277-280(1994).
RN [2]
RP SEQUENCE FROM N.A.
RA van Leeuwen I.S., Teske E., van Garderen E., Rutteman G.R., Mol J.A.;
RT "Extrapituitary growth hormone expression in the dog is initiated at the normal pituitary transcription start site in the mammary gland and at multiple upstream sites in lymphoid cells";
RL Submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RC TISSUE=Mammary gland;
RX MEDLINE=99337113; PubMed=10411306;
RA Lantinga-van Leeuwen I.S., Oudshoorn M., Mol J.A.;
RT "Canine mammary growth hormone gene transcription initiates at the pituitary-specific start site in the absence of Pit-1";
RL Mol. Cell. Endocrinol. 150:121-128(1999).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.

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DR EMBL: Z23067; CAA80601.1; -;
DR EMBL: U92533; AAF21502.1; -;
DR EMBL: AF069071; AAD43366.1; -;
DR PIR: S35790; S35790.
DR HSSP: P01246; 1BSP.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Hormone; pituitary; signal.
FT SIGNAL 1 26 BY SIMILARITY.
FT CHAIN 27 216 SOMATOTROPIN.
FT DISUFID 78 189 BY SIMILARITY.
FT DISUFID 206 214 BY SIMILARITY.
FT CONFLICT 4 4 S->G (IN REF. 1).
FT CONFLICT 7 7 N->T (IN REF. 1).
SQ SEQUENCE 216 AA; 24468 MM; ABAD1DD59F1DAED CRC64;

Query Match 61.4%; Score 423; DB 1; Length 216;
Best Local Similarity 64.9%; Pred. No. 4.8e-35;
Matches 87; Conservative 17; Mismatches 28; Indels 2; Gaps 2;

QY 2 FPTIPLSRLEFDNMLRARRLYQLAYDTYQFEFEAYILKEOKYSFLONPQTSICFSES IPT 61

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DB 27 FPMPLSSLFANNAVLRQHLHQLADTYKEFERAYIPEGORYS-IONQAACFCSETIPA 85
QY 62 PSNRVKTQOKSNLELLRISLLIQSWLEFPVOLLRSVFANSVLYGASDSNVYRHLKDLDEG 121
DB 86 PTGKDEAQORSDVELRFSLLLIQSWLGPVFLSRVFTNSLVFGTSD-RVYEKLDLEEG 144
QY 122 IOTLAWRLDGSPPR 135
DB 145 IQALMRELEDGSPPR 158

RESULT 15
SOMA_FELICA STANDARD; PRT; 216 AA.
ID F46404;
AC 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DE Somatotropin precursor (Growth hormone).
GN GHI.
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX NCBI_TaxId=9685;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=pituitary;
RX MEDLINE=96194806; PubMed=8654953;
RA Warren W.C., Bentle K.A., Bogosian G.;
RT "Cloning of the cDNAs coding for cat growth hormone and prolactin.";
RL Gene 168:247-249(1996).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=pituitary;
RX MEDLINE=95369713; PubMed=7642118;
RA Castro-Peralta F., Barrera-Saldana H.A.;
RT "Cloning and sequencing of cDNA encoding the cat growth hormone.";
RL Gene 160:311-312(1995).
CC -1- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
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CC -----
CC EMBL: U25973; AAA67294.1; -.
CC DR EMBL: U13390; AAA96142.1; -.
CC DR HSSP: P01246; 1BSF.
CC DR InterPro: IPR001400; SOMATOTROPIN.
CC DR Pfam: PF00836; SOMATOTROPIN.
CC DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
CC DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
CC KW Hormone; pituitary; Signal.
CC FT SIGNAL 1 BY SIMILARITY.
CC FT CHAIN 27 216 SOMATOTROPIN.
CC FT DISULFID 78 189 BY SIMILARITY.
CC FT DISULFID 206 214 BY SIMILARITY.
CC FT CONFLICT 7 N -> T (IN REF. 2).
CC FT CONFLICT 26 T -> A (IN REF. 2).
CC FT CONFLICT 159 G -> A (IN REF. 2).
CC FT CONFLICT 181 L -> P (IN REF. 2).
CC SQ SEQUENCE 216 AA; 24454 MW; 05820239A7D292C6 CRC64;
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Query Match

61.4%; Score 423; DB 1; Length 216;

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Best Local Similarity 64.9%; Pred. No. 4, 8e-35;
Matches 87; Conservative 17; Mismatches 28; Indels 2; Gaps 2;
QY 2 FPTPLSLRLEFDMAMLRARRLYLQALDYTYQEEFAYIIEKQYIFLQNPQTSICFSSIFP 61
DB 27 FPMPLSSLFANNAVLRQHLHQLADTYKEFERAYIPEGORYS-IONQAACFCSETIPA 85
QY 62 PSNRVKTQOKSNLELLRISLLIQSWLEFPVOLLRSVFANSVLYGASDSNVYRHLKDLDEG 121
DB 86 PTGKDEAQORSDVELRFSLLLIQSWLGPVFLSRVFTNSLVFGTSD-RVYEKLDLEEG 144
QY 122 IOTLAWRLDGSPPR 135
DB 145 IQALMRELEDGSPPR 158
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Search completed: September 25, 2002, 09:59:52
Job time: 166 sec

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: September 25, 2002, 09:59:30 ; Search time 42.97 Seconds
(without alignments)
543.503 Million cell updates/sec

Title: US-09-819-094-30
Perfect score: 689
Sequence: 1 MFPTPLSRFLFDNMLRARR.....KDLREGIQTIMLRLEDGSPR 135

Scoring table:
BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database :

- 1: SP archaea:*
- 2: SP bacteria:*
- 3: SP fungi:*
- 4: SP human:*
- 5: SP invertebrate:*
- 6: SP mammal:*
- 7: SP mhc:*
- 8: SP organelle:*
- 9: SP phage:*
- 10: SP plant:*
- 11: SP rodent:*
- 12: SP virus:*
- 13: SP vertebrate:*
- 14: SP unclassified:*
- 15: SP rivirus:*
- 16: SP bacteriaph:*
- 17: SP archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	631.5	91.7	245	4	014644	014644 homo sapien
2	612	88.8	217	4	016631	016631 homo sapien
3	591.5	85.8	202	4	014643	014643 homo sapien
4	523	75.9	217	6	007369	007369 macaca mulla
5	519	75.3	212	6	007368	007368 macaca mulla
6	519	75.3	217	6	007367	007367 macaca mulla
7	505	73.3	217	4	014407	014407 homo sapien
8	443	64.3	171	4	090NL5	090NL5 homo sapien
9	424	61.5	167	4	P78451	P78451 homo sapien
10	417	60.5	179	4	Q9HBZ1	Q9HBZ1 homo sapien
11	415	60.2	216	11	Q9R2C3	Q9R2C3 mus musculu
12	414	60.1	216	11	Q9JXM4	Q9JXM4 cavia porce
13	412	58.6	190	11	Q70615	Q70615 spalax leuc
14	404	58.6	192	6	Q9JXR0	Q9JXR0 cavia porce
15	404	58.6	192	6	Q9TU21	Q9TU21 capra hircu
16	403	58.5	192	6	Q9TQW9	Q9TQW9 bos indicus

17	402	58.3	204	6	Q95205	Q95205 ovis aries
18	402	58.3	217	6	Q28957	Q28957 sus scrofa
19	397	57.6	217	6	Q9BEC0	Q9BEC0 tragulus ja
20	397	57.6	217	6	Q9BEB9	Q9BEB9 tragulus ja
21	388	56.3	178	6	Q95MJ6	Q95MJ6 tarsius syr
22	387	55.0	143	6	Q95240	Q95240 canis famli
23	379	55.0	178	6	Q95MT5	Q95MT5 tarsius ban
24	364	52.8	145	6	Q9BDR4	Q9BDR4 galago cras
25	358.5	52.0	218	13	Q9PU72	Q9PU72 cynops pyr
26	346	50.2	199	4	014406	014406 homo sapien
27	336	48.8	195	3	Q91386	Q91386 amia calva
28	273.5	39.7	110	6	Q9N265	Q9N265 bos taurus
29	200	29.0	187	13	Q98SR8	Q98SR8 megalobrama
30	200	29.0	188	13	Q98RT4	Q98RT4 megalobrama
31	200	29.0	188	13	Q90283	Q90283 carassius a
32	200	29.0	188	13	Q90W27	Q90W27 carassius a
33	200	29.0	210	13	Q90Z01	Q90Z01 mylopharyng
34	199	28.9	210	13	Q91056	Q91056 hypophthalm
35	198.5	28.8	120	6	Q9TSC0	Q9TSC0 ovis aries
36	197.5	28.7	140	13	Q90WE4	Q90WE4 gallus gall
37	195	28.3	188	13	Q90W26	Q90W26 carassius a
38	194	28.2	188	13	Q98SR7	Q98SR7 cyprinus ca
39	181	26.3	210	13	Q90W30	Q90W30 cirrhinus m
40	181	26.3	211	13	Q9W798	Q9W798 catla catla
41	180	26.1	210	13	Q90WV7	Q90WV7 catla catla
42	148	21.5	45	6	Q9TSP9	Q9TSP9 ovis aries
43	144.5	21.0	52	6	Q9TV91	Q9TV91 equus cabal
44	143	20.8	210	13	Q91160	Q91160 oncorhynch
45	141	20.5	187	13	Q91077	Q91077 lateolabrax

ALIGNMENTS

RESULT 1	014644	PRELIMINARY:	PRT:	245 AA.
AC	014644			
DT	01-JAN-1998 (TREMBLrel. 05, Created)			
DT	01-JAN-1998 (TREMBLrel. 05, Last sequence update)			
DT	01-DEC-2001 (TREMBLrel. 19, Last annotation update)			
DE	PLACENTAL GROWTH HORMONE ISOPFORM HGH-V3 PRECURSOR.			
GN	HGH-V.			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RC	TISSUE=FULL-TERM PLACENTA;			
RX	MEDLINE=98373737; PubMed=9709963;			
RA	Bozuszewski C.L., Svensson P.A., Jansson T., Clark R.,			
RA	Carlsson L.M.S., Carlsson B.;			
RT	"Cloning of two novel growth hormone transcripts expressed in human placenta."			
RL	J. Clin. Endocrinol. Metab. 83:2878-2885(1998).			
DR	EMBL; AF006061; AAB71829.1; -.			
DR	HSSP; P01241; 1A22.			
DR	Interpro; IPR001400; SOMATOTROPIN.			
DR	Pfam; PF00103; hormone; 1.			
KW	PROSITE; PS00266; SOMATOTROPIN_1; 1.			
FT	SIGNAL.			
FT	SIGNAL.			
SO	SEQUENCE	1	26	POTENTIAL.
		245 AA;	27101 MW;	14CC7F8CD75D91C8 CRC64;
Query Match				
Best Local Similarity 91.7%; Score 631.5; DB 4; Length 245;				
Matches 125; Conservative 3; Mismatches 0; Indels 1; Gaps 1;				
OY	2	FFTPTPLSRFLFDNMLRARRLYQALVADTYQEFEEFAYIIKEQKYSFLQNPQPSISCSISPT 61		
DB	27	FFTPTPLSRFLFDNMLRARRLYQALVADTYQEFEEFAYIIKEQKYSFLQNPQPSISCSISPT 86		

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QY 62 PSNRVKTOQKSNLELRISILLIQSWLEPVQLRSVFANSIYVGASDSNRYRLKDLDEG 121
DB 87 PSNRVKTOQKSNLELRISILLIQSWLEPVQLRSVFANSIYVGASDSNRYRLKDLDEG 146
QY 122 IOTLM-WRL 129
DB 147 IOTLMGRLEDSR 155

RESULT 2
Q16631 PRELIMINARY: PRT: 217 AA.
AC Q16631; Q14405;
DT 01-NOV-1996 (TREMblrel. 01, Created)
DT 01-NOV-1996 (TREMblrel. 01, Last sequence update)
DE 01-DEC-2001 (TREMblrel. 19, Last annotation update)
DE GROWTH HORMONE
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxId=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=82014939; PubMed=6269091;
RA DeNoto F.M., Moore D.D., Goodman H.M.;
RT "Human growth hormone DNA sequence and mRNA structure: possible
RT alternative splicing.";
RL Nucleic Acids Res. 9:3719-3730(1981).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE=84057143; PubMed=6357679;
RA Adelman J.P., Hayflick J.S., Vasser M., Seeburg P.H.;
RT "In vitro deletional mutagenesis for bacterial production of the
RT 20,000-dalton form of human pituitary growth hormone.";
RL DNA 2:183-193(1983).
RX EMBL: Y00520; CAA23779.1; -.
DR HSSP: P01241; 1HGJ.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SQ SEQUENCE 217 AA; 24803 MW; CCC4D81150D908AC CRC64;

Query Match 88.8%; Score 612; DB 4; Length 217;
Best Local Similarity 91.8%; Pred. No. 8.4e-55;
Matches 123; Conservative 3; Mismatches 8; Indels 0; Gaps 0;

QY 2 PPTIPLSRFDNMLRARLYQLADYDTYQEEFEAYILKEQKYSFLQNPQTSICFSISPT 61
DB 27 PPTIPLSRFDNMLRARLYQLADYDTYQEEFEAYILKEQKYSFLQNPQTSICFSISPT 86
QY 62 PSNRVKTOQKSNLELRISILLIQSWLEPVQLRSVFANSIYVGASDSNRYRLKDLDEG 121
DB 87 PSNRVKTOQKSNLELRISILLIQSWLEPVQLRSVFANSIYVGASDSNRYRLKDLDEG 146
QY 122 IOTLMWRLDEGSPR 135
DB 147 IOTLMGRLEDSR 160

RESULT 3
Q14643 PRELIMINARY: PRT: 202 AA.
AC Q14643;
DT 01-JAN-1998 (TREMblrel. 05, Created)
DT 01-JAN-1998 (TREMblrel. 05, Last sequence update)
DE 01-DEC-2001 (TREMblrel. 19, Last annotation update)
DE PLACENTAL GROWTH HORMONE 20KDA ISOFORM PRECURSOR.
GN HGH-V.
OS Homo sapiens (Human).

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OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxId=9606;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=FULL-TERM PLACENTA;
RX MEDLINE=98373737; PubMed=9709963;
RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,
RA Carlsson L.M.S., Carlsson B.;
RT "Cloning of two novel growth hormone transcripts expressed in human
RT placenta.";
RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).
RX EMBL: AF006060; AAB71828.1; -.
DR HSSP: P01241; 1A22.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 2.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW Signal.
FT SIGNAL.
SQ SEQUENCE 1 26 POTENTIAL.
38B64D011A9197C6 CRC64;

Query Match 85.8%; Score 591.5; DB 4; Length 202;
Best Local Similarity 88.8%; Pred. No. 9.6e-53;
Matches 119; Conservative 0; Mismatches 0; Indels 15; Gaps 1;

QY 2 PPTIPLSRFDNMLRARLYQLADYDTYQEEFEAYILKEQKYSFLQNPQTSICFSISPT 61
DB 27 PPTIPLSRFDNMLRARLYQLADYDTYQEEFEAYILKEQKYSFLQNPQTSICFSISPT 71
QY 62 PSNRVKTOQKSNLELRISILLIQSWLEPVQLRSVFANSIYVGASDSNRYRLKDLDEG 121
DB 72 PSNRVKTOQKSNLELRISILLIQSWLEPVQLRSVFANSIYVGASDSNRYRLKDLDEG 131
QY 122 IOTLMWRLDEGSPR 135
DB 132 IOTLMGRLEDSR 145

RESULT 4
Q07369 PRELIMINARY: PRT: 217 AA.
AC Q07369;
DT 01-NOV-1996 (TREMblrel. 01, Created)
DT 01-NOV-1996 (TREMblrel. 01, Last sequence update)
DE 01-DEC-2001 (TREMblrel. 19, Last annotation update)
DE SOMATOTROPIN 3 PRECURSOR (GROWTH HORMONE 3).
OS Macaca mulatta (Rhesus macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_TaxId=9544;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=PLACENTA;
RX MEDLINE=94008724; PubMed=8404617;
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;
RT "Cloning of four growth hormone/chorionic somatomotropin-related
RT complementary deoxyribonucleic acids differentially expressed during
RT pregnancy in the rhesus monkey placenta.";
RL Endocrinology 133:1744-1752(1993).
CC -!- FUNCTION: GROWTH HORMONE PLAYS AN IMPORTANT ROLE IN GROWTH
CC CONTROL.
CC -!- SUBCELLULAR LOCATION: SECRETED.
CC -!- SIMILARITY: BELONGS TO THE SOMATOTROPIN/PROLACTIN FAMILY.
DR EMBL: L16554; AAL18841.1; -.
DR HSSP: P01241; 1AXI.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.

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Query Match	75.3%	Score 519;	DB 6;	Length 212;
Best Local Similarity	74.48%;	Pred. No. 27e-45;		
Matches	99;	Conservative	20;	Mismatches 14;
				Indels 0; Gaps 0;
OY	3	PTTSLRDLNMALRRRLVQIAYDTGEEFEAAIIIEKQKSFLFNQTLCSSESIPPP	62	
	[:::]	[:::]	[:::]	[:::]

[illegible]

RESULT	7	
014407		
ID	014407	PRELIMINARY;
AC	014407	PRT; 217 AA
PT	01-NOV-1996 (Tremblere), 01, Created)	

DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
 DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE CHORIONIC SOMATOTROPIN CS-2.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 OX NCBI_TaxID=9606;
 RN NCBI_TaxID=9606;
 RP SEQUENCE FROM N.A.
 RX MEDLINE=89307277; PubMed=2744760;
 RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
 RA Seeburg P.H.;
 RT "The human growth hormone locus: nucleotide sequence, biology, and
 RT evolution."
 RL Genomics 4:479-497(1989).
 RN [2]
 RP SEQUENCE FROM N.A.
 RX MEDLINE=91102558; PubMed=1980158;
 RA Vnencak-Jones C.L., Phillips J.A. III.;
 RT "Hot spots for growth hormone gene deletions in homologous regions
 RT outside of Alu repeats."
 RL Science 250:1745-1748(1990).
 DR EMBL: J03071; AAA52553.1; -;
 DR HSSP: P01241; 1A22.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 SQ SEQUENCE 217 AA; 24994 MW; 39FAACDDB6B2E951 CRC64;

Query Match 73.3%; Score 505; DB 4; Length 217;
 Best Local Similarity 76.5%; Pred. No. 7.4e-44;
 Matches 101; Conservative 13; Mismatches 18; Indels 0; Gaps 0;

OY 4 TTPLESLRFDNAMLRRARLYOLAYDYTOEFEEAYILKEOKYSFLONPOTSLCFSESIPTP 63
 DB 29 TTPLESLRFDNAMLRRARLYOLAYDYTOEFEEAYILKEOKYSFLONPOTSLCFSESIPTP 88
 OY 64 NREKVTQOKSNLELLRISLLIQSWLEPYQLRSVFANSILVYGASDSNVYRHLKDEEGIQ 123
 DB 89 NMEETQOKSNLELLRISLLIQSWLEPYQLRSVFANSILVYGASDSNVYRHLKDEEGIQ 148
 OY 124 TLMRLDEGSPR 135
 DB 149 TLMRLDEGSPR 160

RESULT 8
 OQUNL5 PRELIMINARY; PRT; 171 AA.
 AC OQUNL5;
 DT 01-MAY-2000 (TREMBLrel. 13, Created)
 DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
 DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE GROWTH HORMONE SPLICING VARIANT.
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 OX NCBI_TaxID=9606;
 RN NCBI_TaxID=9606;
 RP SEQUENCE FROM N.A.
 RC TISSUE=PIUITARY;
 RA Song H., Peng Y., Dai M., Huang Q., Mao Y., Zhang Q., Mao M., Fu G.,
 RA Luo M., Chen J., Hu R.;
 RT "Human growth hormone variant splicing gene."
 RL Submitted (DEC-1998) to the EMBL/GenBank/DBJ databases.
 DR EMBL: AF110644; AAD48584.1; -;
 DR HSSP: P01241; 1AXI.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 2.
 DR PRINTS: PR00836; SOMATOTROPIN.

DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 SQ SEQUENCE 171 AA; 19801 MW; 9FA9013991FA9F28 CRC64;

Query Match 64.3%; Score 443; DB 4; Length 171;
 Best Local Similarity 66.7%; Pred. No. 1.2e-37;
 Matches 92; Conservative 13; Mismatches 13; Indels 20; Gaps 3;

OY 2 FPTPLSLRFDNAMLRRARLYOLAYDYTOEFEEAYILKEOKYSFLONPOTSLCFSESIPTP 61
 DB 27 FPTPLSLRFDNAMLRRARLYOLAYDYTOEFEEAYILKEOKYSFLONPOTSLCFSESIPTP 86
 OY 62 PSNRKVTQOKSNLELLRISLLIQSWLEPYQLRSVFANSILVYGASDSN----- 110
 DB 87 PSNRKVTQOKSNLELLRISLLIQSWLEPYQLRSVFANSILVYGASDSN----- 140
 OY 111 --VYRHLKDEEGIQTL 126
 DB 141 GLLYCFRRMDK-VETFL 157

RESULT 9
 ID P78451 PRELIMINARY; PRT; 167 AA.
 AC P78451;
 DT 01-MAY-1997 (TREMBLrel. 03, Created)
 DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)
 DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
 DE SOMATOTROPIN (CHORIONIC SOMATOTROPIN) (HCS) (FRAGMENT).
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.
 OX NCBI_TaxID=9606;
 RN NCBI_TaxID=9606;
 RP SEQUENCE FROM N.A.
 RX MEDLINE=78071761; PubMed=593368;
 RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;
 RT "Construction and analysis of recombinant DNA for human chorionic
 RT somatomammotropin."
 RL Nature 270:494-499(1977).
 RN [2]
 RP SEQUENCE OF 110-167 FROM N.A.
 RX MEDLINE=78160787; PubMed=611657;
 RA Seeburg P.H., Shine J., Martial J.A., Ullrich A., Goodman H.M.,
 RA Baxter J.D.;
 RT "Nucleotide sequence of a human gene coding for a polypeptide
 RT hormone."
 RL Trans. Assoc. Am. Physicians 90:109-116(1977).
 DR EMBL: V00593; CAA23840.1; -;
 DR EMBL: M25118; AAA35721.1; -;
 DR HSSP: P01241; 1A22.
 DR InterPro: IPR001400; SOMATOTROPIN.
 DR Pfam: PF00103; hormone; 1.
 DR PRINTS: PR00836; SOMATOTROPIN.
 DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
 DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
 KW Chorton.
 FT NON_TER
 SQ SEQUENCE 167 AA; 19586 MW; 6EC7829D3938E976 CRC64;

Query Match 61.5%; Score 424; DB 4; Length 167;
 Best Local Similarity 78.0%; Pred. No. 1e-35;
 Matches 85; Conservative 9; Mismatches 15; Indels 0; Gaps 0;

OY 27 DTYOEFEEAYILKEOKYSFLONPOTSLCFSESIPTPSNRKYTKQOKSNLELLRISLLIQS 86
 DB 2 DTYOEFEEAYILKEOKYSFLONPOTSLCFSESIPTPSNRKYTKQOKSNLELLRISLLIQS 61
 OY 87 WLEPVQLRSVFANSILVYGASDSNVYRHLKDEEGIQTLMMRLDEGSPR 135
 DB 62 WLEPVQLRSVFANSILVYGASDSNVYRHLKDEEGIQTLMMRLDEGSPR 110

OS Spalax leucodon ehrenbergi (Ehrenberg's mole rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;
OC Spalax.
OX NCBI_TaxID=30637;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=99124645; PubMed=9924177;
RA Lioupiis A., Nevo E., Wallis M.;
RT "Cloning and characterisation of the gene encoding mole rat (Spalax
RT ehrenbergi) growth hormone.";
RL J. Mol. Endocrinol. 22:29-36(1999).
DR EMBL: AJ005819; CA06716.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
KW SIGNAL.
FT CHAIN 1 26 POTENTIAL.
FT SIGNAL 27 216 GROWTH HORMONE.
FT SEQUENCE 216 AA; 24627 MW; EEA8A523BA0ADFE CRC64;

Query Match 59.8%; Score 412; DB 11; Length 216;
Best Local Similarity 63.4%; Pred. No. 2.4e-34;
Matches 85; Conservative 18; Mismatches 29; Indels 2; Gaps 2;

OY 2 FFTPLSLRFDNMLRRRLYLQALDYDYOFEFEAYILKEQKYSFLQNPQTSICFSESIP 61
DB 27 FPAMPXSLNLFANAVLRAOHQLADYKKEFERAYIPGGRYS-IDNQAAFCFSETIPA 85
OY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVOLLRVSFANSILVYGASDSNRYRLKDL 121
DB 86 PTGKEAQOKSDLELLRLISLLIQSWLGPVOLFSLRVFTNSLVFGTSD-RVYEKLKDL 144
OY 122 IOTLMWRLEDSGR 135
DB 145 IOTLMWRLEDSGR 158
RESULT 14
O9JRG0
ID O9JRG0 PRELIMINARY; PRT; 190 AA.
AC O9JRG0;
DT 01-OCT-2000 (TREMBlrel. 15; Created)
DT 01-OCT-2000 (TREMBlrel. 15; Last sequence update)
DT 01-DEC-2001 (TREMBlrel. 19; Last annotation update)
DE GROWTH HORMONE (FRAGMENT).
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Hystriognathi; Cavidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=20231762; PubMed=10767558;
RA Adkins R.M., Vandenberg J., Li W.H.;
RT "Molecular evolution of growth hormone and receptor in the guinea-pig,
RT a mammal unresponsive to growth hormone.";
RL Gene 246:357-363(2000).
DR EMBL: AF238493; AAF67172.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; UNKNOWN_1.
FT NON_TER 1 1
FT SEQUENCE 190 AA; 21962 MW; 6A0394FC5E707BE8 CRC64;

Query Match 58.6%; Score 404; DB 11; Length 190;

Best Local Similarity 61.2%; Pred. No. 1.3e-33;
Matches 82; Conservative 19; Mismatches 31; Indels 2; Gaps 2;
OY 2 FFTPLSLRFDNMLRRRLYLQALDYDYOFEFEAYILKEQKYSFLQNPQTSICFSESIP 61
DB 1 FPAMPXSLNLFANAVLRAOHQLADYKKEFERAYIPGGRYS-INHTQAFCFSETIPA 59
OY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVOLLRVSFANSILVYGASDSNRYRLKDL 121
DB 60 PTGKEAQOKSDLELLRLISLLIQSWLGPVOLFSLRVFTNSLVFGTSD-RVYEKLKDL 118
OY 122 IOTLMWRLEDSGR 135
DB 119 IOTLMWRLEDSGR 132

RESULT 15
O9TU21
ID O9TU21 PRELIMINARY; PRT; 192 AA.
AC O9TU21;
DT 01-MAY-2000 (TREMBlrel. 13; Created)
DT 01-MAY-2000 (TREMBlrel. 13; Last sequence update)
DT 01-JUN-2001 (TREMBlrel. 17; Last annotation update)
DE GROWTH HORMONE.
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=INDIAN BETAL;
RA Mukhopadhyay U.K., Sahni G.;
RT "Indian goat growth hormone cDNA."
RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF177287; AAF03130.1; -
DR HSSP: P01246; 1BST.
DR InterPro: IPR001400; SOMATOTROPIN.
DR Pfam: PF00103; hormone; 1.
DR PRINTS: PR00836; SOMATOTROPIN.
DR PROSITE: PS00266; SOMATOTROPIN_1; 1.
DR PROSITE: PS00338; SOMATOTROPIN_2; 1.
SO SEQUENCE 192 AA; 21977 MW; A5A6977B607F31BA CRC64;

Query Match 58.6%; Score 404; DB 6; Length 192;
Best Local Similarity 62.7%; Pred. No. 1.4e-33;
Matches 84; Conservative 18; Mismatches 30; Indels 2; Gaps 2;

OY 2 FFTPLSLRFDNMLRRRLYLQALDYDYOFEFEAYILKEQKYSFLQNPQTSICFSESIP 61
DB 3 FPAMSLSLFLANAVLRAOHQLADYKKEFERAYIPGGRYS-IDNTQVAFCFSETIPA 61
OY 62 PSNRVKTQOKSNLELLRLISLLIQSWLEPVOLLRVSFANSILVYGASDSNRYRLKDL 121
DB 62 PTGKEAQOKSDLELLRLISLLIQSWLGPVOLFSLRVFTNSLVFGTSD-RVYEKLKDL 120
OY 122 IOTLMWRLEDSGR 135
DB 121 IOTLMWRLEDSGR 134

Search completed: September 25, 2002, 09:59:31
Job time: 150 sec

